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COVER: Red Crossbill
Photo by Mrs. David Howard, February 6, 1970.



WHITE PELICAN SEEN AT BLACKWATER REFUGE

Leon Rhodes

During the past three years, Blackwater National Wildlife Refuge near Cambridge, Maryland, has reported such strange exotics as the Egyptian Goose, Stanley (Paradise) Crane, Flamingo, White-fronted Goose, and "pink" swan. Keeping up the pace of feathered attractions at the refuge, station personnel most recently observed a White Pelican (Pelecanus erythrorhynchos) from the observation tower. Mr. G. Wallace Stewart of the Blackwater staff first noted the bird on Saturday afternoon, February 28, 1970, flying above the vast expanse of refuge marsh. Additional sightings of this strange visitor were made on March 1 and 2 by other members of the staff and also by visiting bird watchers, including T. L. Eliot, Jr., V. E. Unger, W. J. Thomas, J. Arnold, M. Arnold, and G. Machado.



White Pelican at Blackwater. Photo by William H. Julian.

The pelican was not seen again during that week and it was feared that it had departed. The bird was rediscovered on March 15, however, by Graham Metson and was subsequently viewed by several ornithologists on March 25, 26, and 27; Harry Armistead and Jared Sparks were among the observers on the 27th. The pelican was still present on April 4 and April 9, when seen by Refuge Manager William H. Julian.

A White Pelican in Maryland is indeed out of its range. The nearest wintering area is along the Gulf States, eastward to the Atlantic coast of Florida. The nearest nesting colonies are in the Dakotas and far western Ontario. Apparently this bird became disoriented and followed a wrong compass heading during an early spring migration. Although rare in the northeastern states, the White Pelican has been seen at least once in every state east of the Mississippi except New Hampshire, Vermont, and Delaware.

The sighting at Blackwater Refuge is only the fifth known record of a White Pelican in Maryland. The latest was on October 4 and 5, 1957, when a lone bird was noted at Gibson Island near Annapolis. An earlier record shows one shot near Oakland in Garrett County in April of 1887. The other two accounts date back prior to 1805: one bird was shot at the mouth of Chester Creek and the other was felled near the mouth of the Susquehanna River. It sounds as if the "old timers" shot just about anything that flew.

White Pelicans normally migrate northward from late March through April, staying mostly west of the Mississippi River. There are several breeding colonies within the United States, but most are in the prairie provinces of western Canada. Although not abundant, the White Pelican is not in immediate danger from pollution as is his close cousin the Brown Pelican.

Blackwater National Wildlife Refuge, Cambridge

CONTRIBUTORS TO IRISH GROVE WILDLIFE SANCTUARY

December 1, 1969 - March 1, 1970

Ambler, D. T. B.
Bishop, Miss J. Catherine
Brown, Mr. & Mrs. Donald
Brown, Mr. & Mrs. Joseph D.
Brown, Mr. & Mrs. Robert T.
Bystrak, Paul G. and Danny
Carpenter, Md. & Mrs. Byron H.
Cooley, Ellen D.
Daniels, Elma
Douglass, Mr. & Mrs. Richard M.
Four Seasons Garden Club of Ruxton
Gatchell, Mrs. R. L.
Gorsuch, Miss Joyce E.
Henning, Winfield
Jewett, Fred & Alice
Krahe, Richard & Jean
Kleen, Mr. & Mrs. Melvin H.
Mason, Mr. & Mrs. Charles N.

Michel, Harry C.
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Smith, Mr. & Mrs. Lloyd
Somerset County Garden Club
Stanley, Mr. Wm. S.
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Zeleny, Dr. & Mrs. Lawrence

BIRDING AT CHRISTMAS

Richard L. Kleen

The highlight of the birding year for many of us takes place during the Christmas season. For it is during that two-week period surrounding Christmas day that the annual Christmas bird counts take place.

Throughout the country thousands of dedicated birders rise in the cold winter dark so as to be at an appointed pre-dawn rendezvous. A number of others have already, at dawn, been birding for hours. These few are the elite among the Christmas Count fraternity—the owl listeners—for during the winter darkness the Screech Owl, the Horned Owl, and kindred nocturnal spirits call to one another, and to imitative birders, for the obvious benefit of those who listen for owls. Throughout the daylight hours, species are checked off and numbers of individuals counted, for the rules of the game require this to be a count, not just a check-list.

As night approaches, all the participants, tired, and only a little less enthusiastic after an exhausting day in the field, gather together to prepare the list. The basis will be those birds recorded during the previous history of the count. The leader, known as the compiler, will call out the first bird on the list. Very possibly, it will be the Common Loon, as the list is always read in the proper AOU Check-List order, starting with the most primitive species of bird and ending with the most evolved. The compiler will call for a count from each of the observation parties. Each party leader will call out the number of Common Loons noted in his area, until all are enumerated. These observations are totaled and the number recorded. This method continues until all previously recorded species have been read. No doubt a number of birds reported in past years will be missed. Perhaps the ponds are frozen this year and water birds are scarce; perhaps the winter seed crop up north is sufficient and there is no great invasion of winter finches; perhaps the early winter was severe and the few laggard migrants that might have remained at feeding stations have either moved south or succumbed to the cold and snow.

However, something new probably will be seen. As the compiler moves from group to group asking about birds never recorded on the count before, the suspense heightens. The more years a count has been conducted, naturally, the smaller chance there is for a new species. When a new bird is announced, it is greeted with cheers, applause, or exclamations of surprise or disbelief. There is usually an experienced birder or two who greets many of these unusual observations with skepticism. Perhaps these experts take a little fun out of the bulbul you recorded at your feeder in Annapolis or that flamingo you glimpsed flying toward the setting sun over Tilghman Island; but the cynic is important at these compilations if we are to temper the enthusiasm that overcomes the vast majority of us when we are in the field. It has been suggested, however, that more friendships have been destroyed by birders who challenge one another's identifications than by bridge partners who pass demand bids.

The Christmas Count area itself is a circle with a radius of $7\frac{1}{2}$ miles. An attempt is made to include within the circle as many good birding areas as possible. The circle is divided into sectors to be covered more or less thoroughly by different parties of birders. Every compiler attempts to secure at least one experienced birder for each sector. Strangely, the less experienced parties often produce the most unusual birds. And often also the most hurt feelings. It would appear almost axiomatic that the more experienced the birder becomes, the fewer rarities he sees. What a pity! Many of us remember with fond pleasure the European or West Indian avian waifs that the wind carried into our ken in former years when we were neophytes. Alas, no more...

The census at Christmas was first suggested in Bird-Lore, the predecessor to Audubon Magazine, seventy years ago with these words:

"It is not many years ago that the sportsmen were accustomed to meet on Christmas day, choose sides, and then hie them to the fields and woods on the cheerful mission of killing practically everything in fur or feathers that crossed their path. Now Bird-Lore proposes a new kind of Christmas ... hunt, in the form of a Christmas bird census, and we hope that all our readers who have the opportunity will aid us in making it a success by spending a portion of Christmas day with the birds, and sending a report of their hunt to Bird-Lore before they retire that night ... [they] will not only be of interest to other participants in the hunt, but will also contribute, in a measure, a census of Christmas birdlife."

The Christmas count has caught on and the past seventy years have seen counters proliferate from hundreds to tens of thousands and counts increase from scores to close to a thousand.

Why indulge in counting birds at Christmas? Some claim it aids science—that the information gathered is of significance in forming conclusions as to distribution, migration, and changes in the population of species. It seems to me that those who would claim scientific accuracy are kidding themselves. There are just too many variables to make the Christmas count of much value to science. Coverage varies, as do weather conditions. So do the thoroughness and talents of the observation parties. To my thinking you can not make something as essentially variable as a Christmas count into a precise scientific study by adding a plethora of rules and regulations to it as some have tried to do.

If its value lies not in science, then it lies somewhere beyond science. As it is the custom for botanists the world over to forsake their microscopes a Sunday in spring to revel in the indiscriminate search for plants, so it is the custom for birders to do their thing at Christmastime. As the botanist is surrounded by the minutia that make up scientific inquiry, so are we all of us surrounded by the minutia that make up our lives in a complicated and materialistic society. We are so taken up by the details that we are in danger of losing sight of the grand design. What better way to regain perspective than to enter the woods and fields where we are the interlopers and leave behind all the

accoutrements of our compliant and civilized life. Few of us have the chance to do this for the period of time we would like, but for one day, around Christmas, we can at least make a start.

Fifteen Christmas Counts were conducted in Maryland this past season. The counts ranged from Crisfield on the lower Eastern Shore to the hills of Allegany County, and each had its share of memorable experiences.

Perhaps the most dramatic birding event of the winter was the unprecedented invasion of Red Crossbills. These erratic northern finches appeared to have their greatest concentration on the Eastern Shore with an amazing 205 recorded at Crisfield, 152 at Southern Dorchester, 110 at Ocean City and lesser numbers at St. Michaels, Denton, Salisbury, and Lower Kent County. Seneca was the only count outside of the Eastern Shore to record them. White-winged Crossbills were also present throughout the State, but in much smaller numbers.

Good years for Evening Grosbeaks are becoming much more frequent. This year they were recorded on every Christmas Count in the State in high numbers.

House Finches continue to increase in Maryland. This year 311 individuals were reported from nine count areas, with the 125 at St. Michaels being the highest. A decade ago, the House Finch was a rare bird and a sighting signalled a red letter day. Now they are common at many feeding stations, especially on the Shore, and seem to be expanding westward.

White-crowned Sparrows continued to increase. These beautiful sparrows were recorded on twelve counts, totalling 248 individuals. Ten years ago 76 individuals were recorded on 4 counts. A tally of 68 individuals at Lower Kent was high for the year.

Laggard migrants appeared rarer than usual with only four orioles recorded in the entire State and a complete absence of unusual warbler sightings.

A run down of some of the more noteworthy observations in the various Maryland counts follows. [For a complete listing of the results of close to 900 North American counts for this season see the April 1970 issue of Audubon Field Notes. This journal is a valuable guide for birders planning trips to other States. A five dollar annual subscription will bring you four seasonal summaries of bird reports from all 20 regions of the United States and Canada as well as the 300-page Christmas Count issue and the Breeding Bird Census report; order through National Audubon Society, 1130 Fifth Avenue, New York, N. Y. 10028.]

Accokeek 68 species. 110 Fish Crows was very high. 3 Black-capped Chickadees reflected the moderate invasion this winter. 30 Great Black-backed Gulls is added evidence that this large gull is increasing in our area.

Allegany 55 species. 18 Ruffed Grouse, 5 Yellow-bellied Sapsuckers,

- 1 Common Raven, 1 redpoll, and 12 White-winged Crossbills were of greatest interest.
- Annapolis 99 species. A Saw-whet Owl was a good observation as this was not a Saw-whet year. 3 terns (Forster's?) was unusual, as was a Lesser Yellowlegs and the Semipalmated Plover.
- Baltimore 76 species. 58 Horned Larks was a good count. 14 Wood Ducks also was high for a Maryland count at this season and there was another record of the Saw-whet Owl.
- Caroline County 73 species. Interesting observations included an Eastern Phoebe, 76 Pine Siskins, and 17 Red-breasted Nuthatches. Of special note was a redpoll recorded during the count period but not on the count day.
- Catoctin 48 species. A Brown Thrasher was an unusual wintering bird at this inland location.
- Crisfield 118 species. 61 Vesper Sparrows was the highest winter count of this sparrow ever made in Maryland. 20 Catbirds, 5 Little Blue Herons, and 17 King Rails also were high and noteworthy.
- Elkton 68 species. 9 Vesper Sparrows were high for this scarce winter bird so close to the Pennsylvania line.
- Kent County 108 species. 3 Baltimore Orioles provided color to the Kent County area. A Green Heron was unusual and Kent County had a Semipalmated Plover, the third of this species to be recorded in the State this Christmas.
- Ocean City 139 species. On the day following the Dorchester count, Ocean City reported the second winter record for the Louisiana Heron in Maryland. Other observations of interest include 2 Black-legged Kittiwakes, a Willet, a Dickcissel, 2 Common Egrets, and a Little Blue Heron.
- Rock Run 68 species. A Red-headed Woodpecker was the most unusual species from this Susquehanna River circle.
- Southern Dorchester 106 species. For most of us 1 Lapland Longspur makes a day unforgettable. Dorchester recorded 5 of them. There was also the first winter record in Maryland of the Louisiana Heron.
- St. Michaels 113 species. 15 Sanderlings, 3 Semipalmated Sandpipers and a Semipalmated Plover added three species to their cumulative list. 388 Bobwhite, 50 White-crowned Sparrows and 28 Hermit Thrushes were count highs.
- Seneca 90 species. A Grasshopper Sparrow is always a good find in winter. 2 Great Black-backed Gulls and a Black-capped Chickadee were worth special mention.
- Triadelphia 73 species. 30 Black-capped Chickadees was very high. It must have been fun separating them from the 155 Carolinas.

In addition to the regularly scheduled counts, tallies were made within the boundaries of three of our four sanctuaries. They are included here in their entirety to acquaint M.O.S. members with their own wintering birds and in hopes that all M.O.S. sanctuaries will be censused in future winters.

Carey Run Sanctuary, Jan. 15. Kendrick Y. Hodgdon, 2 hrs. Cold, icy, calm.
 Turkey..... 4 Common Crow..... 2 Eastern Bluebird... 12
 Great Horned Owl.... 1 Black-cap Chickadee. 20 Slate-col. Junco... 4
 Hairy Woodpecker.... 1 Red-br. Nuthatch.... 1 8 sp., 45 indiv.

Mill Creek Sanctuary, Dec. 30. Jeff Effinger, Don Meritt, Randy Nichols,
 John Valliant, Dick Kleen, in three parties. Continuous rain, some
 drizzle. 6 party-hours.

Whistling Swan..... 1	Black-cap Chickadee.. 1	Brown-hd. Cowbird.. 3
Great Blue Heron.... 1	Carolina Chickadee.. 49	Cardinal..... 50
Canada Goose..... 1442	Tufted Titmouse..... 18	Evening Grosbeak... 19
Mallard..... 274	White-br. Nuthatch.. 1	Pine Siskin..... 50
Black Duck..... 431	Red-br. Nuthatch.... 1	American Goldfinch. 5
Pintail..... 30	Winter Wren..... 1	Rufous-s. Towhee... 35
Turkey Vulture..... 1	Carolina Wren..... 10	Slate-col. Junco... 101
Red-tailed Hawk.... 1	Mockingbird..... 6	Tree Sparrow..... 6
Bobwhite..... 1	Catbird..... 1	Field Sparrow..... 12
Mourning Dove..... 18	Robin..... 3	White-throated Sp. 773
Belted Kingfisher... 1	Hermit Thrush..... 1	White-crowned Spar. 1
Yellow-shaft Flicker 11	Golden-cr. Kinglet.. 4	Fox Sparrow..... 2
Red-bel. Woodpecker. 22	Ruby-crowned Kinglet 1	Swamp Sparrow..... 20
Hairy Woodpecker.... 2	Starling..... 69	Song Sparrow..... 390
Downy Woodpecker... 15	Myrtle Warbler..... 8	45 species
Blue Jay..... 71	Red-winged Blackbird 15	3978 individuals

Irish Grove Sanctuary, Dec. 31. Paul Bystrak, V. Edwin Unger, 13 1/2
 party-hours.

Horned Grebe..... 4	American Woodcock... 2	Robin..... 350
Great Blue Heron.... 11	Common Snipe..... 6	Hermit Thrush..... 3
Whistling Swan..... 12	Sanderling..... 42	Golden-cr. Kinglet. 3
Canada Goose..... 27	Herring Gull..... 6	Ruby-cr. Kinglet... 3
Mallard..... 32	Ring-billed Gull.... 3	Loggerhead Shrike.. 1
Black Duck..... 146	Mourning Dove..... 47	Starling..... 22
Gadwall..... 3	Barn Owl..... 2	Myrtle Warbler... 222
Pintail..... 16	Screech Owl..... 1	House Sparrow..... 10
Green-winged Teal... 36	Great Horned Owl.... 5	Eastern Meadowlark. 66
Blue-winged Teal.... 2	Short-eared Owl..... 1	Red-wing Blackbird 1015
American Widgeon... 52	Belted Kingfisher... 3	Boat-tailed Grackle 1
Greater Scaup Duck.. 7	Yellow-shaft Flicker 13	Cardinal..... 20
Lesser Scaup Duck... 8	Red-bel. Woodpecker. 1	Red Crossbill..... 63
Common Goldeneye.... 31	Hairy Woodpecker.... 2	Evening Grosbeak... 25
Bufflehead..... 21	Downy Woodpecker... 4	Pine Siskin..... 60
Oldsquaw..... 4	Tree Swallow..... 7	American Goldfinch. 71
Hooded Merganser.... 4	Common Crow..... 20	Rufous-s. Towhee... 7
Turkey Vulture..... 13	Carolina Chickadee.. 17	Savannah Sparrow... 2
Black Vulture..... 8	Brown-head Nuthatch. 11	Seaside Sparrow.... 3
Cooper's Hawk..... 1	Carolina Wren..... 4	Field Sparrow..... 2
Red-tailed Hawk.... 1	Long-bill Marsh Wren 6	White-throated Sp.. 59
Marsh Hawk..... 7	Short-b. Marsh Wren. 1	Fox Sparrow..... 4
Sparrow Hawk..... 2	Mockingbird..... 5	Swamp Sparrow..... 43
Bobwhite..... 2	Catbird..... 4	Song Sparrow..... 49
Virginia Rail..... 14	Brown Thrasher..... 6	74 sp., 2787 indiv.

THE PRESIDENT'S PAGE



It is gratifying to be able to announce to you that MOS is again out of debt. The response by our members, and others, to our request for funds to acquire Irish Grove Wildlife Sanctuary was almost fantastic. It seems that you accepted this not as an obligation, but rather as an opportunity—and such it was. Most of us are quick to voice our sentiments on conservation matters, but you were just as eager to do something about it. The officers, the Trustees and the Sanctuary Committee are grateful and, through me, express their thanks.

On page 4 you will find the sixth list of contributors to the Irish Grove Sanctuary Fund. A final list of those who have contributed specifically to this fund since the sixth list was prepared will be published in the June issue.

Whereas the Irish Grove goal has been reached, and while no campaign will be launched, the need for funds does not end here. We have now a network of sanctuaries across the State, and the real purpose is to use them—as nature study areas, as research areas, as outdoor classrooms and as "human sanctuaries" where people may go to commune with nature and nature's creatures. Optimum use will entail expenditures. Further, there is a need for more sanctuaries, other habitats are in need of saving, and additional nature centers must be established in or near other population centers.

The wisdom of those who, years ago, established our Sanctuary Fund is now firmly proven. Securities valued at approximately thirty thousand dollars reposed in that fund when the opportunity arose to buy Irish Grove, and it was this that gave us the courage to borrow the balance and gave the lender the boldness to make the loan.

It now behooves us to re-establish the Sanctuary Fund, a repository for donations which we have every reason to believe will continue. As a matter of fact, there remain a number of 1970 pledges to give the Fund a healthy start. Others, learning of what we are doing, will want to be a part of the effort, and so we soon should again have a very real Sanctuary Fund.

V. Edwin Unger

WINTER BIRD SURVEY TECHNIQUE TESTED IN MARYLAND

Chandler S. Robbins

Introduction

A world-wide system for monitoring changes in bird populations has been the subject of several recent international meetings. Although primary emphasis to date has been on measuring changes in bird populations during the breeding season, there has also been much interest in establishing a standardized method for sampling bird populations during mid-winter.

The United States, Canada and Finland are presently the only countries in which a nationwide program exists for counting birds on a large scale in winter. The Christmas Bird Count in the United States and Canada does reflect gross changes in populations of certain species, but since it is not organized on a statistically sound basis it is not possible to estimate the degree of precision or the representativeness of the counts as a measure of changes in the continental population. The annual winter count in Finland, which is conducted by observers on skis, is more carefully controlled than is our Christmas Bird Count, but even it is not organized as well as it should be for statistical analysis of the results.

Immediately after a bird census study conference that I was privileged to attend at Hillerød, Denmark, in the summer of 1968, I met with Kenneth Williamson of the British Trust for Ornithology and David Lea of the Royal Society for the Protection of Birds to prepare a preliminary draft of a winter bird survey technique that could be applied on a world-wide scale.

Initial field testing was conducted by staff members of the Migratory Bird Populations Station in the winter of 1968-69 and the results were presented at an International Symposium on Bird Census Work and Environmental Monitoring that was held in Ammarnäs, Sweden, in June 1969. The results of the 1968-69 field work showed that coverage on foot was more effective in winter than the roadside-count method of the Breeding Bird Survey. Roadside coverage yielded larger numbers of a few species, but for the majority of species larger counts were obtained by spending the same amount of time on foot. Furthermore, variability (coefficient of variation) was less on the walking routes, indicating that with the same number of routes, foot coverage could detect smaller changes in populations. Furthermore, observers were unanimous in their assertion that foot coverage was more enjoyable than 50-stop coverage by car.

The International Bird Census Committee, at the Ammarnäs symposium, urged that more field testing of Winter Bird Survey techniques be conducted in the United States and Great Britain in the winter of 1969-70 so that results could be discussed at the August 1970 meeting of the

committee in the Netherlands, and recommendations made to the XV International Ornithological Congress at the Hague in early September 1970.

Field testing was resumed in December 1969 at the Patuxent Wildlife Research Center by personnel of the Migratory Bird Populations Station, and in January 1970 an invitation was extended to selected members of the Maryland Ornithological Society and the Delmarva Ornithological Society to participate in the testing.

Methods

In order for the results to qualify for statistical analysis, certain standardized procedures are necessary. Routes had to be established either at random or according to a systematic sampling plan. Details of coverage, such as starting time, length of route, and total time in the field had to be standardized, and minimum standards of weather conditions had to be set.

The length of route recommended by the International Bird Census Committee was 5 miles (equals 8 kilometers). Coverage was to start at sunrise, and the total time, as determined from coverage on the Patuxent route, was set at 4 hours.

For convenience in mapping and displaying the results, the Maryland routes were located by means of a "key point" which was defined as the exact center of each 7 1/2-minute topographic map. Thus, each map could have one and only one route and each route would be entirely contained on a single map.

Each observer was instructed to map his own route with the stipulation that the shape of the route should approximate a square with the key point located at the center of the south line. It was recognized that streams, ponds, super highways, impenetrable fences, and other obstructions would make it impossible for most routes to form a perfect square or even a rectangle; but having a definite goal in mind in laying out a route prevented the observer from selecting a route that sampled the most interesting or most productive habitats.

Coverage

The area selected for trial coverage in Maryland in January and February 1970 was a rectangle extending from Chesapeake Bay west through the Coastal Plain and Piedmont nearly to the base of Catoctin Mountain, and from the suburbs of Washington and Annapolis north to the Frederick and Towson areas (Fig. 1). Five additional routes were established in northern Baltimore County so that the area sampled would include all of Baltimore, Howard and Montgomery Counties as well as portions of Anne Arundel, Carroll, and Frederick Counties. The total area represented by the sample counts was 2,364 square miles. Routes were assigned by coordinators in the Montgomery, Baltimore, Frederick, Patuxent and Anne Arundel Chapters of the Maryland Ornithological Society.

Of the 41 Maryland routes assigned, 36 were successfully completed during the specified period, January 16 through February 15, 1970. One route was covered 4 days late but with very satisfactory results. One other route was attempted, but not completed because of a snow storm. One was not covered because of bad weather conditions, and no word was received about the other two.

Key points of two routes were changed of necessity. One fell within a military base; the other in a very inhospitable portion of Baltimore City where it was unsafe to conduct a route on foot. All but one of the other routes either ran directly through the key point (or the closest land if the point fell in the water) or within 1500 feet of it. Four routes were almost perfect squares. The others departed more or less from this pattern, primarily to follow permanent landmarks and avoid natural and man-made obstructions. Observers marked their routes on topographic maps that are filed at the Migratory Bird Populations Station. Most observers also submitted a detailed description of routes covered and problems encountered, as well as information regarding contacts with landowners that might be helpful to future observers.

It was requested that all routes be laid out in a closed circuit path with the key point lying somewhere on the route; the starting point could be set anywhere for the convenience of the observer. Of the 38 routes from which data were received, all but two conformed with this request.

Weather

It was anticipated that some weather problems would be encountered. The biggest problem was that a snow storm developed on the final Saturday of the period and this was followed by strong winds on the following day. Fortunately, the snow on February 14 was light in most places and all but one of the 10 parties who were afield that day completed their counts. A comparison of these counts with those made on other days does not show any significant difference except for the absence of Turkey Vultures and for smaller numbers of hawks and crows observed on February 14.

Starting temperatures varied from 18° to 55°. Except for two areas, wind speeds were not more than 12 m.p.h. at the beginning and 18 at the end. The two exceptions were 15 to 25 m.p.h. and 15 to 20 m.p.h.

Elevation

The highest and lowest elevation above sea level was recorded for each route and the mid-point between the maximum and minimum was used for comparing bird populations with elevation. Extreme elevations ranged from 0 to 220 feet on the Coastal Plain and from 80 to 880 feet on the Piedmont. The mid-points between the minimum and the maximum elevations ranged from 10 feet (Sparrows Point Quadrangle) to 155 feet (Odenton Quadrangle) on the Coastal Plain and from 230 feet (Sterling Quadrangle) to 770 feet (Winfield and New Freedom Quadrangles) in the Piedmont. The mean elevation of Coastal Plain routes was about 75 feet, and of Piedmont routes 460 feet. The mean for all combined was 370 feet (Fig. 2).

Species

The total number of species recorded on the 38 counts was 80. The species totals on individual counts (excluding the incomplete count) ranged from 17 (3 routes) to 42 (2 routes); the mean was 28. The number of species per route tended to be higher on the Coastal Plain and to be lowest at the higher elevations in the Piedmont.

Only the Common Crow, Starling, and Cardinal were found on all routes. The Downy Woodpecker and Carolina Chickadee were missed on only one route and the Tufted Titmouse, House Sparrow, and Slate-colored Junco were missed on two routes.

The following species were found on only one route in the state: Great Blue Heron, Black Duck, Green-winged Teal, American Widgeon, Lesser Scaup, Oldsquaw, Ruddy Duck, Hooded Merganser, Sharp-shinned Hawk, Virginia Rail, Common Snipe, Barred Owl, Ruby-crowned Kinglet, and Loggerhead Shrike.

Mapping

A map was made showing the distribution and abundance of each species in central Maryland. Eight of these maps are reproduced here (Figs. 3-10).

The Ring-necked Pheasant (Fig. 3) was entirely restricted to the Piedmont, becoming more frequent toward the west. The Blue Jay (Fig. 4) was most common this winter near the Fall Line, which separates Piedmont from Coastal Plain, and decreased rapidly at higher elevations in the Piedmont. The Fish Crow (Fig. 5) was sparsely scattered through the Coastal Plain (with a small concentration at a Baltimore city dump), but also locally common high in the Piedmont, associating with a large roost of the Common Crow. The Black-capped Chickadee (Fig. 6) extended its range farther south than usual this winter and even outnumbered the Carolina Chickadee (Fig. 7) on one Baltimore County route. The Tufted Titmouse (Fig. 8) was present in unusually large numbers and was found on all except two city routes (East Baltimore and Sparrows Point). The Horned Lark (Fig. 9), as expected, was much more common in the Piedmont where large open fields predominate over woodland. And the eastern limit of the White-crowned Sparrow's center of abundance in Maryland is clearly shown in Fig. 10.

Figure 11 shows counts of several of the less common species as well as high counts for a few of the more common ones. Only one species was selected from each of the 38 routes, so if a route had both species of crossbills only one is shown here. Black Vultures were restricted to the central Piedmont. Killdeer were seen on four Piedmont routes, but always single individuals. Pileated Woodpeckers surprised several observers not only by their total of 17 individuals (nearly a half bird per route!), but by some of the places where they were found; most extraordinary were 2 on the Curtis Bay route. In fact, Pileateds were observed on twice as many routes as were Pine Siskins--and this during a flight year of the siskin. The scarcity of siskins on the Winter Bird Survey

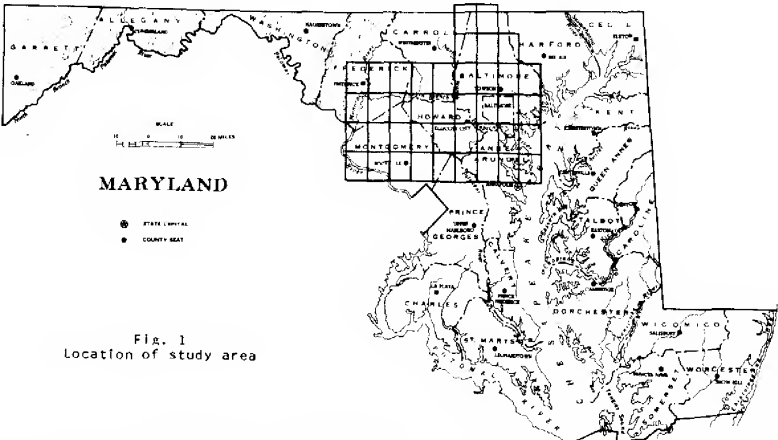


Fig. 1
Location of study area

Fig. 2. Elevation of study area
(Christmas Count circles indicated)

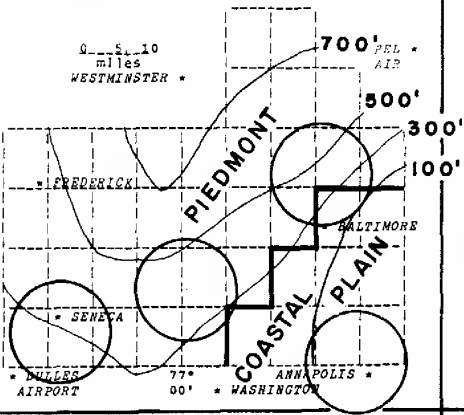


Fig. 3
RING-NECKED PHEASANT

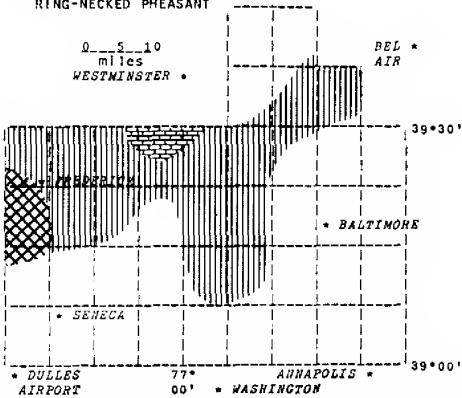


Fig. 4
BLUE JAY

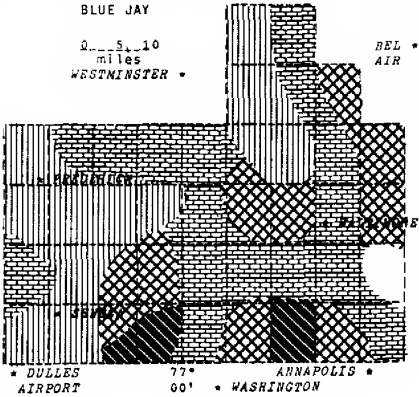


Fig. 5
FISH CROW

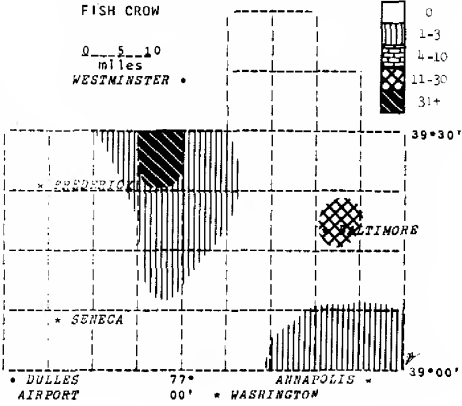


Fig. 5
BLACK-CAPPED CHICKADEE

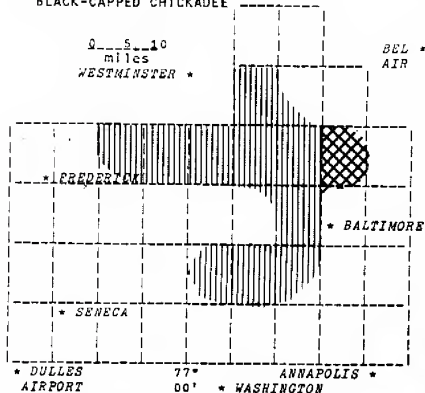


Fig. 7
CAROLINA CHICKADEE

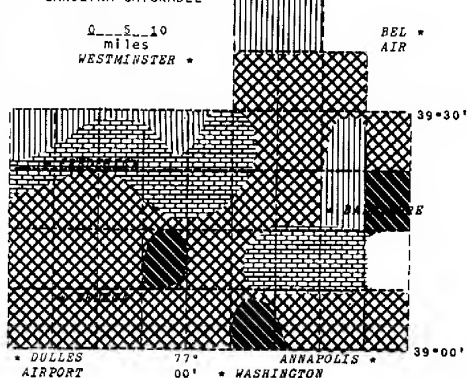


Fig. 8
TUFTED TITMOUSE

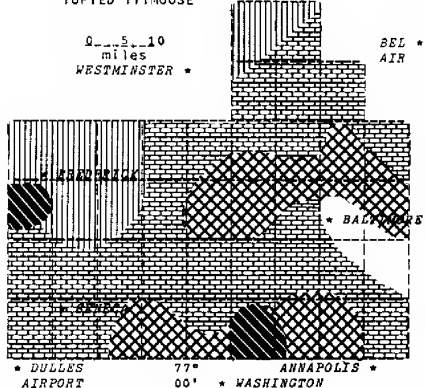


Fig. 9
MORNED LARK

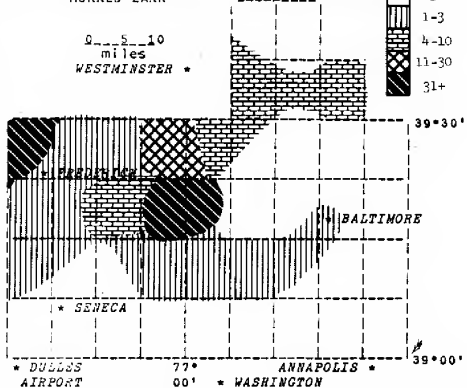


Fig. 10
WHITE-CROWNED SPARROW

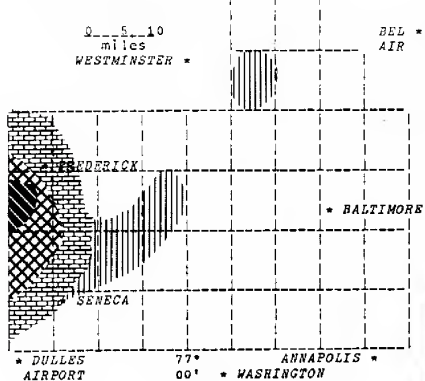


FIG. 11
MISCELLANEOUS SPECIES

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is believed to be because Sweet Gum and other native seeds on which siskins were feeding earlier in the winter had been exhausted so the birds were flocking to feeding stations; and feeding stations were poorly sampled by the Winter Bird Survey.

Detecting Changes in Abundance

The principal purpose of a Winter Bird Survey is to measure changes in abundance of individual species over a period of years. One of the most important achievements of this year's field test in central Maryland was to obtain a measure of the variability of each species within the area sampled. This variability can be used to compute the number of routes that would be required to detect a population change of any desired magnitude. If all routes had reported Cardinals and if the number of Cardinals on each route were somewhere within the range of 15 to 25 individuals, this would yield a very low variance and consequently only a small number of routes would be required to detect a change of 20 percent in the population from one year to another. Unfortunately, bird populations are not this uniformly distributed. The actual count for Cardinals on this Survey ranged from 5 individuals per route to 47. This is a very satisfactory range from the statistician's point of view and for this particular species we find that, given the same variability we had this year, a sample size of 36 routes would be sufficient to detect a change of 20 percent in the population. At the other extreme, consider the Evening Grosbeak, which was found on fewer than one-third of the routes, but whose numbers ranged as high as 87 individuals. One can visualize that it would take an enormous sample to pinpoint a "mean" population of Evening Grosbeaks with sufficient accuracy that a change of 20 percent could be detected from one year to another. In fact, using this year's data for Evening Grosbeak it would take a sample size of nearly 2,000 routes to accomplish this feat!

We certainly have no ambitions for trying to measure such small changes in the populations of erratic winter visitors or even in the populations of such flocking species as Red-winged Blackbirds and Common Grackles over any small portion of their total range. In fact, there would be little point in attempting such accuracy as these populations are extremely mobile and could shift drastically from one week to the next. Rather, we are primarily interested in measuring changes in the populations of species that occur singly or in small flocks.

Statistical Summary of Common Species

A statistical summary for the commonest species is presented in Table 1. The species are arranged in decreasing order of conspicuousness as judged by the total numbers reported. The columns following the species name give the arithmetic mean, the smallest and largest counts, the number of routes on which the species was found, the standard error of the mean, the variance, and the number of routes that would be required to detect a change of 20 percent or 30 percent with a 95 percent probability rate.

Table 1. Summary of Most Conspicuous Species

Species	Mean	Range	No. of Routes	Standard Error	Variance	No. of Rts. Needed to Detect Change of	
						20%	30%
Starling	174.5	2-913	38	30.58	34595	117	52
Red-winged Blkbird	85.9	0-1280	19	43.85	71145	991	440
Common Crow	56.5	3-275	38	10.34	3958	127	57
House Sparrow	52.2	0-266	36	9.20	3132	118	53
Slate-colored Junco	32.6	0-210	36	6.45	1543	149	66
Tree Sparrow	22.8	0-455	28	12.21	5516	1000+	485
White-thr. Sparrow	19.3	0-177	33	5.18	966	266	118
Cardinal	17.4	5- 47	38	1.71	108	36	16
Brown-headed Cowbird	16.6	0-210	14	7.17	1952	727	323
Rock Dove	14.6	0- 76	31	2.88	308	151	67
Carolina Chickadee	13.3	0- 36	37	1.68	104	61	27
Mourning Dove	13.1	0-143	23	4.68	812	497	221
Tufted Titmouse	9.9	0- 38	36	1.55	89	93	41
Blue Jay	8.2	0- 37	34	1.46	79	120	54
Downy Woodpecker	7.9	0- 84	37	2.22	183	299	133
Song Sparrow	7.6	0- 37	35	1.12	46	82	36
Herring Gull	6.4	0-146	6	4.24	682	1000+	761
Am. Goldfinch	6.0	0- 37	27	1.56	91	259	115
Mockingbird	5.2	0- 19	34	0.69	18	69	31
Horned Lark	5.1	0- 53	16	1.91	136	534	237
Common Grackle	5.1	0- 46	15	1.96	142	558	248
Bobwhite	4.8	0- 27	20	1.28	61	276	122
Ring-billed Gull	3.9	0- 55	6	2.03	156	1000+	471
Carolina Wren	3.5	0- 18	28	0.68	17	146	65
Evening Grosbeak	3.3	0- 87	10	2.38	209	1000+	877
Field Sparrow	3.1	0- 36	15	1.10	45	482	214
Red-bellied Wdpecker	3.0	0- 16	30	0.53	11	121	54
Golden-cr. Kinglet	2.5	0- 15	18	0.67	17	278	124
White-br. Nuthatch	2.4	0- 22	23	0.65	16	280	124
White-crowned Sparrow	2.3	0- 41	7	1.21	55	1000+	483
Fish Crow	2.2	0- 51	9	1.43	75	1000+	718
Red Crossbill	2.2	0- 52	6	1.48	81	1000+	772
E. Meadowlark	1.9	0- 16	12	0.81	24	680	302
Brown Creeper	1.9	0- 13	21	0.50	9	261	116
Robin	1.6	0- 22	12	0.66	17	623	277
Turkey Vulture	1.6	0- 15	10	0.57	12	461	205
Yellow-shafted Flicker	1.6	0- 6	23	0.30	3	146	65
Ring-necked Pheasant	1.1	0- 21	12	0.58	12	1000+	469
Red-br. Nuthatch	1.1	0- 13	10	0.46	8	676	300

Note that all species found on fewer than 10 routes and still common enough to have a mean in excess of one bird per route would require more than 1000 routes to detect a change of 20 percent in the population. On the other hand, if the sample size were doubled, from 38 routes to 76 routes, and if variability in the larger sample were the same as in 1970, it should be possible to detect a change of 30 percent in almost any of our more common winter songbirds except those that typically occur in large flocks.

Comparison with Christmas Bird Count

As shown in Figure 2, four Christmas Bird Count circles fell entirely or substantially within the area sampled by the Winter Bird Survey.

This gives an opportunity to compare for the first time the results of a systematic count with the more selective type of coverage that is typical of the Christmas Count. Fortunately for this comparison, the majority of the Winter Bird Survey participants had also taken part in this winter's Christmas Bird Count within the same study area. On the other hand, it was from the more experienced C.B.C. observers that the W.B.S. counters were selected.

The four Christmas Counts were taken on Dec. 27 (Baltimore and Triadelphia) and Dec. 28 (Seneca and Annapolis-Gibson Island). Both days were clear to partly cloudy, with temperatures between 28° and 40°, with snow on the ground, and with very strong winds (20-30 m.p.h., gusting to 50). The high winds on the Christmas Counts certainly created poorer observing conditions than were encountered, on the average, on the Winter Bird Survey, where only two out of 38 routes had high winds. Visibility on the other hand, was perfect on the Christmas Counts, and inferior on nearly one-third of the Winter Bird Survey trips.

Table 2. Comparison of Christmas Bird Count and Winter Bird Survey

Species	Birds per 4 party-hours					Birds per 4 party-hours			
	Piedmont		Coastal Plain			Piedmont		Coastal Plain	
	WBS	CBC	WBS	CBC		WBS	CBC	WBS	CBC
Bobwhite	5.68	4.72	2.11	4.92	Starling	156.36	127.06	230.78	145.11
Turkey Vulture	2.18	2.08	0.00	0.95	Myrtle Warbler	0.04	1.02	0.33	0.49
Mourning Dove	16.14	13.38	3.67	6.65	House Sparrow	51.25	19.60	55.11	22.98
Yellow-shafted Flicker	1.60	1.04	1.44	1.38	Eastern Meadowlark	2.46	2.23	0.22	1.29
Red-bellied Woodpecker	2.68	1.26	4.11	2.89	Red-winged Blackbird	97.62	3.43	38.56	9.85
Hairy Woodpecker	.75	.38	1.22	0.77	Common Grackle	4.79	42.63	6.11	7.26
Downy Woodpecker	8.43	3.15	6.33	3.97	Brown-headed Cowbird	16.34	13.53	17.44	9.60
Blue Jay	7.21	5.53	11.22	29.85	Cardinal	16.79	17.93	19.44	31.88
Common Crow	64.57	27.52	20.22	12.55	Evening Grosbeak	3.46	3.98	2.77	4.12
Black-capped Chickadee	1.18	0.84	0.11	0.00	House Finch	0.00	1.35	0.00	1.32
Carolina Chickadee	12.07	9.68	17.11	14.25	Purple Finch	0.39	0.69	0.33	1.42
Tufted Titmouse	8.68	6.35	13.78	25.82	Pine Siskin	1.21	0.73	0.11	1.26
White-br. Nuthatch	2.11	1.53	3.33	1.29	Am. Goldfinch	6.46	12.44	4.56	15.17
Red-breasted Nuthatch	0.36	0.43	3.33	0.34	Red Crossbill	2.10	0.22	8.00	0.00
Brown Creeper	1.61	0.54	2.78	0.43	White-winged Crossbill	0.54	0.00	0.44	0.00
Winter Wren	0.14	0.06	0.44	0.31	Rufous-sided Towhee	0.57	0.63	0.33	1.66
Carolina Wren	2.68	1.40	6.00	2.89	Slate-colored Junco	30.11	38.80	40.33	45.05
Mockingbird	5.39	6.52	4.44	11.05	Tree Sparrow	27.57	9.28	7.89	1.66
Robin	0.93	0.36	4.00	0.37	Field Sparrow	3.32	3.91	2.33	1.97
Eastern Bluebird	0.18	0.44	0.00	0.28	White-crowned Sparrow	3.00	1.13	0.00	0.00
Golden-crowned Kinglet	2.34	1.07	3.11	0.22	White-throated Sparrow	19.04	19.66	18.11	28.80
Ruby-crowned Kinglet	0.00	1.20	0.11	0.12	Swamp Sparrow	0.07	0.38	0.44	0.18
Cedar Waxwing	0.00	0.53	0.00	0.46	Song Sparrow	6.68	9.31	10.56	9.63

In Table 2, W.B.S. counts (mean birds per 4-hour trip) for the more common landbird species are compared with C.B.C. counts (converted to mean birds per 4 party-hours). Separate comparisons are made for Piedmont counts and Coastal Plain counts, since for some species there are important differences in populations between Piedmont and Coastal Plain. Three of the four Christmas Count circles (75 percent) were in the Piedmont, and 29 of the 38 (76 percent) Winter Bird Survey routes were in the Piedmont. The number of party-hours on the Christmas Counts ranged from 87 (Seneca) to 130 (Annapolis-Gibson Island). The three Piedmont Christmas Counts were weighted equally in obtaining the Piedmont mean.

The Christmas and Winter Bird Survey results show a remarkable similarity in the counts for most species. The principal differences

are higher numbers on the Christmas Counts for certain feeding station species (especially American Goldfinches, Purple Finches, House Finches and Evening Grosbeaks) and conspicuous roadside species (especially Cardinals, Blue Jays, and Slate-colored Juncos). Most other species tended to be higher on the Winter Bird Survey.

Acknowledgments

Sincere thanks are extended to coordinators Carl Carlson, Mrs. John Cooper, William Shirey, Mrs. Alta Gras and Mrs. W. L. Henderson for selecting and instructing observers and for expediting the submission of reports; to John McDaniel and Danny Bystrak of the Migratory Bird Populations Station for writing computer programs and preparing final copies of the maps; and to the following observers, many of whom took great pains to scout their routes in advance, obtain permission from land owners, and take other precautions to assure the best possible coverage of their transects: Burton J. Alexander, Tommy Andres, Clay Andres, Daniel Beisel, Charles M. Buchanan, Danny Bystrak (3 routes), Carl W. Carlson, Mrs. Richard D. Cole, Mrs. J. P. Cooper, Jr., T. Dennis Coskren, Douglas L. Frost, C. Douglas Hackman, Robert H. Hahn, Dr. and Mrs. Howard M. Hodge, David W. Holmes, Craig A. Jeschke, Gwilym S. Jones, Hank Kaestner (2 routes), Kathleen Klimkiewicz, Haven Kolb, R. Taylor McLean, Jr., Patricia J. Moore, R. Neal Moore, Mr. and Mrs. Harvey Mudd, Kevin Mullen (2 routes), Charles L. Mullican, Dr. J. William Oberman, Albin M. Plant, Chandler S. Robbins (6 routes), Marvin Rogul, Dr. and Mrs. William L. Steinhart, John Symonds, Willet T. Van Velzen (3 routes), Robert J. Werrlein, Harold Wierenga, Edward P. Wilson.

Appendix

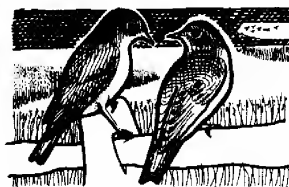
Number of routes each year (N) needed to detect a change of 20 percent in the mean (\bar{x}) with a reliability of 95 percent was computed by the formula $N = \frac{t^2 V}{(.20\bar{x})^2}$, where V is the variance, and t is taken from Student's "t table."

Bureau of Sport Fisheries and Wildlife
Migratory Bird Populations Station, Laurel

JUNIOR NATURE CAMP

The 11th Annual Junior Nature Camp, sponsored by the Baltimore Chapter of M.O.S., will be held June 19-21, 1970, at Camp Mohawk. Anyone who has at least completed the 5th grade by June and has not yet entered the 10th grade is eligible if he (or she) has a keen interest in one or more phases of nature study. Areas of study will include birds, mammals, botany, insects and water biology and it is planned to have classes for beginners, intermediate and advanced study in each category.

The cost to each camper will be \$11.50 with an extra charge of \$4.00 for round-trip bus transportation. Since the number of campers is limited it would be well to get your application in early. For applications and further information please call Mrs. Dorothy Clark at 665-3532.



THE SEASON

OCTOBER, NOVEMBER, DECEMBER, 1969

Chandler S. Robbins

October was a cool month to the north of Maryland, but averaged normal or above in all parts of our State. Precipitation was sub-normal in all counties, and less than 50 percent of average in the central portion. As is typical for October, cold fronts swept overhead every few days, causing the birds to put on a fascinating, never-ending spectacle. There literally was not a day in the whole month that proved dull ornithologically. Dates of cold frontal passage were: Oct. 3, 8, 14, 17, 21, 22, and 27.

November and December weather was close to normal, except for wind-blown snows that isolated many communities in the western half of the State during the final week end of the calendar year. The absence of any prolonged hard freeze on the lower Eastern Shore was a decided advantage to the birders who stalked through the marshes in search of herons, rails, sandpipers, marsh wrens and sparrows during the Christmas holidays, as these birds were present in respectable numbers.

The following observers provided the great majority of the migration dates shown in Tables 1 and 2: Western Md. (Washington, Allegany and Garrett Counties)--Mrs. A. B. Mallonee, James F. Paulus, K. Y. Hodgdon;

Table 1. Fall Arrival Dates, 1969

Species	W.Md	Fred	Balt	Howd	Mont	Pr.G	Anne	Calv	Kent	QuAn	Cero	Talb	Somr	Worc
Whistling Swan	--	11/18	--	0	11/12	11/12	10/15	11/ 1	--	10/26	11/ 1	10/27	--	--
Am. Widgeon	0	0	--	--	10/19	--	11/28	--	--	10/26	0	9/27	--	--
Canvasback	0	0	0	11/28	--	0	12/17	11/11	--	10/26	11/ 3	11/29	10/31	--
Bufflehead	--	10/24	10/25	--	--	0	11/28	11/ 2	--	11/16	12/20	11/ 2	11/22	10/26
Oldsquaw	0	0	11/13	0	0	0	11/28	--	--	10/18	0	10/19	--	10/26
White-winged Scoter	0	0	0	0	0	0	--	--	12/28	10/12	0	9/28	--	10/26
Am. Coot	0	0	10/28	0	11/ 9	--	--	--	--	12/ 6	--	10/19	--	10/26
Black-capped Chickadee--	--	10/28	11/11	11/16	11/17	0	0	0	12/28	0	0	0	12/31	0
Hermit Thrush	--	10/11	10/11	--	--	10/25	10/12	10/ 4	9/29	12/11	9/30	10/ 9	10/ 4	--
Eastern Bluebird	--	--	--	10/23	10/ 4	10/17	10/29	9/30	--	10/10	--	9/27	10/14	--
Rusty Blackbird	12/27	--	--	--	11/ 9	9/25	11/18	9/26	--	0	10/24	10/ 4	0	--
Dickcissel	0	0	10/25	11/24	11/12	8/29	0	0	0	0	0	0	0	9/26
Evening Grosbeak	11/ 8	11/20	11/13	11/10	11/ 9	10/28	11/28	12/ 2	--	--	11/ 1	11/29	12/31	11/11
House Finch	0	0	10/15	11/13	10/25	12/12	10/21	0	10/28	--	10/16	12/21	0	12/30
Common Redpoll	12/27	0	11/22	0	0	12/17	0	0	0	0	1/ 1	0	0	0
Pine Siskin	10/18	10/22	10/15	11/15	10/22	10/21	10/19	10/24	10/24	11/16	10/19	10/18	10/25	10/24
Red Crossbill	0	0	12/ 7	11/28	12/24	12/12	12/28	0	12/28	0	11/20	12/28	11/13	11/ 1
White-wg. Crossbill	12/24	0	0	0	0	12/18	12/24	0	0	0	0	12/28	0	11/22
Tree Sparrow	11/30	11/23	11/ 2	11/10	11/11	12/ 9	12/21	12/21	--	0	12/29	12/21	12/31	--
White-cr. Sparrow	10/11	--	10/15	10/13	10/ 4	--	--	0	--	10/12	10/15	10/12	10/13	9/26
Fox Sparrow	--	--	10/22	11/ 2	11/ 9	11/13	11/ 7	11/ 1	10/28	--	--	10/26	11/22	--

Table 2. Fall Departure Dates, 1969

Species	Latest				W.Mi	Fred	Balt	Howd	Mont	Pr.G	Anne	Calv	Kent	Caro	QuAn	Talb	Somr	Worc
	1966	1967	1968	1969														
Green Heron	12/15	10/15	11/11	10/19	--	9/24	9/28	9/28	--	--	--	--	--	--	10/11	10/19	9/30	12/30
Cattle Egret		10/21	12/5	11/16	0	0	0	0	0	0	0	0	0	0	0	9/28	9/16	11/16
Common Egret	11/20	10/14	11/24	10/31	0	0	--	9/27	0	--	--	--	--	8/14	10/17	8/2	10/31	10/26
Snowy Egret	9/17	10/22	11/9	10/18	0	0	0	0	0	0	0	0	0	0	10/18	9/28	9/30	9/27
Canada Goose	12/4	12/30	12/21	11/22	10/12	10/26	10/12	10/26	--	10/28	10/17	11/19	--	--	--	10/19	11/23	--
Blue-winged Teal				10/4	0	9/24	--	9/2	9/29	--	--	--	--	--	10/7	--	9/30	--
Wood Duck				12/27	--	9/20	12/27	--	11/23	--	--	--	--	10/22	--	--	9/30	--
Broad-winged Hawk	10/9	10/22	10/27	10/12	10/12	9/21	9/13	10/1	9/21	8/25	--	0	0	0	--	9/15	0	--
Osprey	10/29	10/21	11/8	10/29	--	10/12	9/27	--	9/26	--	--	--	--	10/29	10/8	10/12	10/11	--
Semipalmated Plover	10/2	10/4		9/27	0	9/24	0	0	9/15	0	--	0	0	--	0	9/21	8/19	9/27
Am. Woodcock	10/26	11/26		12/7	--	10/15	--	12/7	11/15	--	11/28	--	--	--	0	--	--	--
Spotted Sandpiper	10/21	12/18	9/29	10/26	--	--	9/28	9/28	9/25	--	--	--	--	--	10/26	10/26	--	--
Greater Yellowlegs	11/27	11/1	11/9	11/23	0	9/24	10/12	11/3	0	0	--	0	--	11/13	--	10/27	11/23	--
Lesser Yellowlegs	11/27	11/22	11/9	10/18	0	9/24	0	0	0	0	--	0	0	--	0	9/20	10/18	--
Pectoral Sandpiper				11/8	0	9/24	0	11/8	9/15	0	--	0	0	--	0	0	10/21	9/27
Least Sandpiper				9/28	0	9/24	0	9/28	9/15	0	--	0	0	--	0	9/12	--	--
Laughing Gull	10/30	11/13	11/9	11/2	0	0	0	0	0	0	--	--	--	--	10/18	11/2	10/13	10/26
Yellow-billed Cuckoo	10/11	10/12	11/3	10/17	8/24	10/12	9/21	9/23	9/25	9/29	--	--	--	9/13	9/13	10/12	9/29	10/17
Black-billed Cuckoo	10/7	10/8	10/9	9/27	--	0	9/11	0	0	0	0	0	0	--	9/26	9/27	0	9/27
Whip-poor-will	10/20	10/6	10/12	9/27	--	--	9/17	9/16	--	--	9/16	--	9/30	--	9/26	0	9/27	--
Common Nighthawk	10/4	10/4	10/1	10/3	--	--	10/1	9/10	9/23	9/7	8/23	9/12	--	9/3	10/3	--	--	--
Chimney Swift	10/21	10/8	10/20	10/13	9/28	10/10	10/12	10/13	10/11	10/6	10/8	10/6	--	10/10	9/21	10/5	--	--
Ruby-thr. Hummingbird	10/15	10/14	9/27	10/6	--	9/20	3/21	10/6	9/28	9/7	--	8/27	9/13	9/13	10/2	10/4	--	--
Yellow-shafted Flicker	10/30	11/3	11/2	11/26	10/26	--	--	11/4	--	11/19	11/22	11/26	10/20	--	10/17	10/19	--	--
Yellow-bellied Sapsucker	11/24	11/21	10/31	11/22	--	10/10	10/4	12/24	12/13	10/29	11/22	--	10/5	--	--	--	10/28	--
Eastern Kingbird	10/8	9/19	9/27	9/22	--	--	8/27	9/9	9/2	8/22	9/22	9/9	--	9/18	8/31	9/20	9/9	--
Great Crested Flycatcher	10/1	10/6	9/19	10/1	--	9/10	9/11	9/22	--	--	9/14	--	--	--	10/1	9/13	9/4	9/21
Eastern Phoebe	11/18	11/29	12/6	10/28	--	--	10/19	10/21	--	--	10/23	10/25	10/28	12/20	10/12	10/19	10/24	10/4
Yellow-bellied Flycatcher	10/25	10/3	9/29	9/30	0	0	0	0	0	0	0	0	9/14	0	9/26	9/13	9/30	9/27
Acadian Flycatcher	9/29	10/28	9/27	9/15	--	--	--	--	9/15	9/7	--	--	9/9	--	5/29	--	9/12	9/10
Traill's Flycatcher	10/13	10/8	9/27	9/25	--	--	--	--	0	0	0	0	0	0	9/19	9/21	9/12	9/25
Least Flycatcher	10/22	10/27	10/7	9/30	--	--	0	9/14	0	0	0	0	9/8	0	9/30	9/29	9/18	9/25
Eastern Wood Pewee	10/27	10/27	10/14	10/5	--	--	--	10/2	9/28	--	--	9/20	10/5	--	10/4	9/28	10/5	10/4
Tree Swallow	10/16	11/2	11/9	10/30	--	--	--	--	--	--	--	10/30	--	10/14	10/18	10/19	10/28	--
Barn Swallow	10/25	9/17	10/4	10/12	9/1	10/12	--	9/3	9/17	9/4	5/15	8/25	--	--	9/23	--	--	--
Purple Martin	9/1	9/14	9/4	9/9	--	--	--	--	9/3	9/4	--	8/21	--	--	9/9	5/17	--	--
Blue Jay	11/1	11/6	10/30	10/28	--	--	10/25	10/5	10/25	10/22	--	10/26	10/5	--	10/18	10/27	10/10	10/4
White-breasted Nuthatch	10/27	11/15	11/27	10/30	--	--	--	10/24	--	--	--	--	10/30	10/28	0	--	--	--
Red-breasted Nuthatch	10/31	10/29	11/25	11/26	--	--	12/30	11/26	10/13	--	9/27	--	11/1	10/27	10/18	10/27	10/29	10/4
House Wren	10/22	10/25	11/9	11/15	9/24	--	--	10/9	11/15	--	--	--	10/30	--	10/11	10/11	10/23	--
Catbird	11/24	12/2	11/29	11/22	--	10/12	10/9	10/10	10/25	--	10/11	9/26	10/26	--	10/18	10/27	11/22	10/4
Brown Thrasher	11/20	12/2	12/5	11/27	9/24	--	--	10/8	11/27	10/17	--	10/9	10/20	--	10/11	10/18	10/24	10/4
Wood Thrush	10/31	10/29	10/31	10/31	--	--	10/4	9/10	10/10	--	--	9/28	10/31	--	10/11	9/30	9/29	--
Hermit Thrush	11/22	11/16	11/30	11/25	--	--	10/31	11/1	11/25	11/8	11/7	10/12	10/31	--	10/18	10/27	10/30	--
Swainson's Thrush	10/30	10/27	12/1	10/19	0	0	10/5	10/9	10/11	--	--	10/11	10/7	9/30	10/11	10/11	10/19	10/4

Species	Latest				W. Md	Fred	Balt	Howd	Mont	Pr. G	Anne	Calv	Kent	Caro	QuAn	Talb	Somr	Worc
	1966	1967	1968	1969														
Gray-cheeked Thrush	10/30	10/26	10/30	10/15	--	--	10/5	9/29	10/15	--	--	--	10/7	0	10/9	10/14	10/15	10/4
Veery	10/23	10/14	10/10	10/14	--	--	9/21	9/21	10/14	--	--	--	9/26	0	10/10	9/30	9/30	9/29
Blue-gray Gnatcatcher	10/9	10/1	10/26	9/27	--	--	8/27	9/14	--	--	--	--	9/14	0	9/27	9/15	--	9/27
Ruby-crowned Kinglet	11/13	11/29	11/21	11/27	11/10	11/10	11/12	11/3	10/31	11/27	--	11/8	10/31	--	10/18	10/26	11/23	10/26
Cedar Waxwing	11/20	12/9	11/9	12/9	10/8	11/6	11/11	11/8	10/26	--	11/6	12/9	10/30	11/1	10/12	9/28	--	10/4
White-eyed Vireo	10/22	10/21	10/9	10/11	0	0	10/11	9/14	--	9/7	9/28	10/5	--	9/19	9/30	10/5	9/30	9/27
Solitary Vireo	10/24	10/27	10/29	11/2	--	--	11/2	10/15	10/12	0	0	0	10/27	0	9/30	10/11	10/5	0
Red-eyed Vireo	10/24	10/27	10/26	10/19	--	--	10/19	10/10	10/24	--	--	9/29	10/6	--	10/10	10/5	10/19	10/4
Philadelphia Vireo	10/11	10/7	9/30	11/9	0	0	0	0	11/9	0	0	0	9/30	0	0	9/27	9/12	9/26
Black-&white Warbler	10/28	10/22	10/21	10/17	--	--	--	10/6	10/1	--	9/28	--	10/1	--	10/17	10/5	10/12	10/4
Worm-eating Warbler	9/29	9/14	9/14	9/22	--	--	--	9/21	--	--	--	--	0	--	9/8	0	0	9/22
Tennessee Warbler	10/23	10/22	10/31	10/19	0	0	9/13	9/15	10/11	0	0	0	10/19	0	10/1	--	0	--
Nashville Warbler	10/21	10/31	11/2	12/16	--	10/11	9/30	9/10	10/3	0	--	0	10/28	12/16	10/10	10/1	10/5	9/29
Parula Warbler	10/28	10/27	10/26	10/14	--	--	--	9/28	9/27	--	--	9/27	10/14	--	10/5	9/30	10/4	9/29
Yellow Warbler	9/30	10/16	10/5	9/29	--	--	--	9/5	--	--	--	--	0	--	9/6	0	9/18	9/23
Magnolia Warbler	10/30	10/22	10/21	10/12	--	10/11	--	10/9	10/11	--	9/28	10/11	10/4	9/16	10/12	10/4	10/2	10/4
Cape May Warbler	10/30	10/29	10/29	10/19	0	0	0	0	0	--	10/1	0	10/19	0	9/28	10/1	10/4	10/4
Black-thr. Blue Warbler	10/24	10/31	10/24	10/28	--	0	9/20	10/21	9/29	0	0	9/28	10/28	--	10/11	10/5	10/15	10/5
Myrtle Warbler	12/10	12/2	11/28	11/23	--	11/6	11/2	11/3	10/25	10/16	--	11/2	10/31	--	10/18	10/27	11/23	--
Black-thr. Green Warbler	10/22	10/22	10/23	11/2	--	10/10	11/2	10/28	10/25	10/2	--	9/28	10/28	--	10/5	10/11	10/5	10/4
Blackburnian Warbler	10/24	10/7	10/8	10/4	--	--	0	9/13	9/26	9/23	0	0	9/30	0	9/11	9/29	0	10/4
Chestnut-sided Warbler	10/22	10/12	10/6	10/5	--	--	--	9/21	9/13	0	9/26	0	10/5	0	9/30	9/29	10/4	9/15
Bay-breasted Warbler	10/16	10/14	10/23	11/28	0	0	11/28	0	9/15	0	0	0	9/29	0	10/4	0	0	10/4
Blackpoll Warbler	10/31	10/27	10/27	10/15	0	0	10/5	10/15	10/11	0	9/28	9/28	10/5	--	10/12	10/12	10/15	10/4
Prairie Warbler	10/2	10/5	10/22	10/9	--	--	--	9/9	--	--	--	--	--	--	--	--	10/9	9/23
Palm Warbler	10/31	11/2	11/2	11/1	0	0	0	10/16	0	10/6	0	0	10/31	--	10/11	10/19	11/1	10/4
Ovenbird	10/24	10/27	10/31	10/29	--	9/20	9/21	10/8	10/27	--	--	--	10/29	--	10/12	10/17	10/11	9/29
No. Waterthrush	10/18	10/21	10/13	10/18	--	0	0	9/26	0	0	9/28	0	10/6	--	10/5	10/3	10/18	9/29
Kentucky Warbler	9/24	9/18	9/15	9/19	--	--	9/11	--	--	--	--	8/17	--	--	9/19	--	9/17	--
Connecticut Warbler	10/8	10/9	10/8	10/15	0	0	--	0	9/27	0	0	0	9/14	0	10/5	10/11	10/15	9/27
Yellowthroat	11/24	10/23	10/26	10/29	--	--	--	10/21	--	10/6	12/20	10/1	10/5	--	10/12	10/18	10/29	--
Yellow-breasted Chat	10/29	10/27	11/1	10/27	--	--	--	9/6	9/26	--	--	--	10/27	--	10/11	8/30	10/24	9/29
Hooded Warbler	10/5	10/30	9/8	10/1	--	--	--	--	--	--	--	8/20	9/8	0	10/1	--	--	9/27
Wilson's Warbler	10/26	10/6	10/9	10/5	0	--	0	10/4	9/26	0	--	0	9/26	0	9/30	10/5	9/14	9/29
Canada Warbler	10/19	10/7	9/29	10/4	--	0	9/11	9/11	9/16	9/7	0	0	9/16	0	10/4	9/29	9/19	10/4
American Redstart	11/1	10/29	10/23	10/27	--	9/21	--	10/3	10/27	9/25	--	9/21	10/5	--	10/5	10/5	10/14	10/4
Bobolink	9/30	10/6	10/2	10/26	--	--	--	9/18	0	9/7	0	9/27	--	9/17	9/20	10/26	--	9/28
Orchard Oriole	9/17	9/7	9/30	9/8	--	--	--	8/14	--	--	--	8/15	9/8	9/6	--	--	--	--
Baltimore Oriole	11/20	11/17	11/29	11/29	9/1	--	--	9/22	9/15	9/17	10/31	9/23	9/13	9/8	9/6	11/29	--	10/4
Scarlet Tanager	10/24	10/23	11/23	11/2	--	--	11/2	10/9	10/5	--	--	9/28	10/14	9/28	10/12	10/5	--	10/4
Summer Tanager	10/24	10/4	10/1	10/14	0	0	0	0	10/14	0	--	--	0	9/28	--	--	--	9/26
Rose-breasted Grosbeak	10/23	10/13	11/12	10/24	--	10/1	10/1	10/4	9/29	10/1	9/28	0	9/29	10/24	10/11	9/30	9/30	9/29
Blue Grosbeak	10/24	10/28	10/12	9/24	0	0	0	0	--	--	--	9/2	9/13	--	9/13	9/16	9/8	9/24
Indigo Bunting	10/26	10/30	10/25	10/19	--	--	--	10/3	--	9/25	--	10/4	9/30	--	10/11	10/5	10/19	10/4
Rufous-sided Towhee	11/19	12/1	11/29	11/28	--	10/21	10/26	11/17	11/4	10/9	11/9	11/28	10/31	--	10/18	11/2	11/1	--
Chipping Sparrow	10/30	10/30	11/9	11/2	--	--	11/2	10/16	10/27	10/22	10/8	10/19	10/31	10/23	10/11	10/26	10/30	--
White-crowned Sparrow	11/1	11/19	10/31	11/24	--	--	10/28	10/23	10/26	11/24	--	0	10/31	--	--	10/26	11/3	--
Fox Sparrow	12/1	11/24	12/27	12/22	--	--	11/20	12/22	11/30	11/30	12/20	--	--	--	--	11/30	11/22	--
Lincoln's Sparrow	10/31	10/23	10/20	10/31	0	0	0	9/27	0	0	0	0	0	0	10/12	10/11	10/31	9/29

March 1970

MARYLAND BIRDLIFE

Frederick County--John W. Richards, Nell Cooley, Mary Porter, Mrs. A. L. Hoffman, William Corliss; Baltimore City and County--Stephen W. Simon, C. Douglas Hackman, Mrs. W. F. Gerringer, Irving E. Hampe; Howard County--Dorothy Rauth, Robert and Shirley Mallalieu, Rosamond Munro, Morris Collins, Glenn Austin; Montgomery--Robert W. Warfield, Peg Frankel, Dr. Thomas Valega, Dr. Fred Evenden, Nell Cooley, Sarah Baker, Robert and Shirley Mallalieu; Prince Georges--C. S. Robbins, Danny and Paul Bystrak, John H. Fales, George Robbins, Arthur W. Alexander; Anne Arundel--Danny and Paul Bystrak, Prof. and Mrs. David Howard, Dr. Lawrence W. Murphy; Calvert--John H. Fales; Kent--Mr. and Mrs. Edward Mendinhall, Mr. and Mrs. Gordon Hackman, Mary Anne Emerine, Charles and Ella Newell, Marjorie Plymire; Caroline--Mr. and Mrs. A. J. Fletcher, Marvin Hewitt, Ethel Engle, V. Edwin Unger, Winifred Bright; Queen Annes--Kathy Klimkiewicz, Paul Woodward, David Bridge, Danny and Paul Bystrak, Jane Church, David Holmes; Talbot--Jan Reese, Harry Armistead; Somerset--Gladys H. Cole, Marion Metcalf, Mr. and Mrs. Herman Kuch, Mr. and Mrs. George Ballantine; Worcester--Chandler S. Robbins, Mr. and Mrs. T.H.C. Slaughter, Matthew Baird, Samuel H. Dyke.

Hérons. We can thank the relatively mild December for a scattering of winter records of southern herons in Maryland. Single Louisiana Herons were found near Wingate on Dec. 29 (Vernon Kleen) and at South Point near Berlin on Dec. 30 (David Holmes and Taylor McLean, Jr.), the first winter records for the State. There still is no Maryland record of this species for November, January, February, or March. High counts of Common Egrets on Christmas Counts were 8 at Crisfield, 7 at Blackwater, and 2 at Ocean City. The Little Blue Heron was found for the first time (5 individuals) on the Crisfield Count (Robbins) and for the second time at Ocean City (V. Kleen). Neither of these species has ever been reported from Maryland in January; probably fewer observers are afield in January than in any other month.

Geese. The cold front of Oct. 3 set off an enormous migration of Canada Geese on Oct. 4-5. Large flocks were spotted over almost every county west of Chesapeake Bay on Oct. 4. The highest actual counts for this day were 882 over Highland in Howard County (Dorothy Rauth) and 610 over Loch Raven (Douglas Hackman); 19 additional flocks totaling over 800 birds were counted between Towson and Rock Run Sanctuary on the following day (Hackman). With some 1,900 Canada Geese near Bellevue on Oct. 4, Harry Armistead saw one short-necked, small-billed bird he identified as the Hutchins race. Other rarities were 2 White-fronted Geese at Blackwater Refuge on the record-early date of Oct. 13 (V. Edwin Unger, Winfield Henning, Okie McCourt) and 1 near Oxford on Dec. 7 (Hughlett Henry and party). Canada, Snow and Blue Geese wintered in Maryland in excellent numbers, but American Brant were conspicuously down.

Ducks. Ever since the Patuxent Wildlife Research Center began releasing hand-reared Wood Ducks two years ago, this species has wintered nearby. They were found on the Little Patuxent River at Odenton this winter (Paul Bystrak); and a record high of 14 on the Baltimore Christmas Count makes one wonder if some of the released birds were involved. A single Common Eider in female plumage was viewed at the Inlet by many

participants on the Dec. 30 Ocean City Christmas Count. A European Widgeon was at Sandy Point State Park, Nov. 11 and Nov. 23 (Prof. H. Wierenga).

Hawks and Eagles. Hawk flights were disappointing. Douglas Hackman made several trips to White Marsh specifically to count migrating hawks in the same area where he has previously tallied more than 10,000 individuals; he saw "almost nothing" on days that should have produced flights. At the Patuxent Wildlife Research Center, Ralph Andrews saw 2 immature Golden Eagles on Nov. 23. Rough-legged Hawks were present as usual in the Dorchester County marshes, but few were seen elsewhere; the Irish Grove bird, however, was back this year. The best hawk count came from Talbot County where Jan Reese saw more than 100 Sharp-shins on Oct. 5.

Quail, Gallinules. Bobwhite were in good shape going into the winter. More than 1,000 were tallied on the Christmas Counts. Common Gallinules are rarely reported from Maryland in late fall; but this year there were three sightings: 1 at Sandy Point State Park on Nov. 23 (Prof. H. Wierenga); another there on Dec. 6 (John Poteet and Baltimore Chapter trip); and 1 far inland at Oldtown (C & O Lock 71) on Nov. 3 (James F. Paulus).

Shorebirds. Don Meritt saw an American Oystercatcher that was illegally shot near St. Michaels in late December; although this species now winters regularly at Chincoteague, this is the first December record for Maryland. It is indeed a pity that odd-looking birds don't have much chance for survival on Maryland's lower Eastern Shore! Late shorebird migrants included 3 Golden Plovers at Sandy Point State Park on Oct. 8 (Prof. Wierenga), 2 Pectoral Sandpipers on Nov. 8 and a Dunlin on Nov. 3 at Rocky Gorge Reservoir in Howard County (Dorothy Rauth), and a Black-bellied Plover at Sandy Point State Park on Dec. 10 (Wierenga). Possibly wintering were 18 Sanderlings and a Dunlin at Benoni Point near Bellevue on Dec. 21 (Will Russell and Harry and Gordon Armistead), a Semipalmated Plover, 3 Semipalmated Sandpipers and 8 Dunlins on Tilghman Island on the same day (Richard Kleen), and 42 Sanderlings on Irish Grove Sanctuary on Dec. 31 (Paul Bystrak).

Gulls. Christmas Counts were taken in 8 of Maryland's 9 Eastern Shore counties, and Great Black-backed Gulls were found on all 8 of these counts. They also were found on all three counts on the Western Shore Coastal Plain, and for the first time 2 were seen far inland on the Seneca count. Another was reported within the Baltimore Christmas Count circle in the Count period. These last two records are the first ever for the Maryland Piedmont and confirm the continued increase in abundance of this species. In their Preliminary List of the Birds of Maryland and the District of Columbia (1947), Hampe and Kolb stated that "all records save one...are recent, within the last dozen years."

Owls. Owl counts were disappointingly low on this winter's Christmas Counts, largely because of the high winds that plagued the week end tallies. Saint Michaels had the most individuals, with 44 Screech, 31 Great Horned and 3 Barn. Crisfield turned in the best variety, thanks to Irish Grove Sanctuary, which provided 4 of the 5 species, and more than half of the 16 individuals (Paul Bystrak).

Woodpeckers. A tally of 25 Pileated Woodpeckers on the Dec. 29 Blackwater (Southern Dorchester County) Christmas Count is the highest ever obtained on any one-day effort in Maryland. Warfield had his first fall record of this species in the Germantown area and Mrs. Rauth found it throughout the period at her home above Rocky Gorge Reservoir in Howard County. Mrs. Marion Metcalf discovered a Pileated at Irish Grove Sanctuary on Oct. 7, after which it was seen periodically throughout the fall and winter; all previous Somerset County records have been in the Pocomoke watershed.

Jays. A peak flight of Blue Jays took place on the morning of Oct. 4, in response to the cold front of the previous day; one of many flocks flying over Kent Point was estimated to contain 500 birds (Patuxent Chapter). The migration continued in full force the following day, when more than 500 individuals were seen at Tilghman Island (Reese).

Chickadees and Titmice. Although Marylanders enjoyed a moderate influx of Black-capped Chickadees, these northern birds did not arrive in time for their migration to be sampled by the Operation Recovery stations. They filtered into the Piedmont primarily in the middle third of November, and the only four Coastal Plain reports were during the Christmas Counts. In New England an invasion of Boreal Chickadees of record-breaking proportions stimulated hopes that this species would reach the Free State for the second winter in recorded history. Observers were alerted to search for the Boreals, especially after one was banded in nearby Virginia by Jim Shiflett. But the only Maryland sighting was made by Mrs. Gordon Hackman at her White Marsh home on Nov. 28. Carolina Chickadees were at normal population levels, but Tufted Titmice experienced a population explosion. The Annapolis Christmas Count total of 839 Tufted Titmice is more than double the highest one-day count for anywhere else in the State. Baltimore's tally of 229 set a local record. The Eastern Shore totals were less spectacular, perhaps because of rain and/or high winds on the days most counts were made. In Southern Dorchester County, where the weather was favorable, the titmouse count was the third highest in 23 years, so abundance was not limited to the region west of the Bay.

Nuthatches. In the preceding issue (25:135) I mistakenly credited David Bridge with an Aug. 27 sighting of a Red-breasted Nuthatch at Kent Point. This bird was seen not by Mr. Bridge, but by Paul Bystrak. Bridge's Aug. 10, 1968 Kent Point sighting still stands as the earliest fall migration date in Maryland logbooks. The 1969 migration extended over 9 1/2 weeks, as new birds were still being banded daily through November 1 at Damsite (Mr. and Mrs. Edward Mendinhall). The most distinctive feature of the Red-breasted Nuthatch migration, however, was not its early start or its late duration, but the large number of individuals that remained in Maryland for the winter--more than twice as many as last year, according to the Christmas Counts. The total for Lower Kent County (152) was more than double the highest total on any United States or Canadian Christmas Count the preceding winter. The abundance of Red-breasted Nuthatches in Maryland this winter was given additional emphasis by the scarcity of their White-breasted relatives. The White-breasts were entirely absent from the Operation Recovery banding stations, indicating

that we had no influx of transients from the north. Every Maryland Christmas Count showed a strong decline in White-breasts from last year, with an average decline of 70 percent.

Wrens. Carolina Wrens ended the year in good numbers, nearly 20 percent above last year, if the Christmas Counts are representative.

Thrushes. The last big influx of Wood Thrushes occurred on Oct. 4; on the following day Douglas Hackman heard one in full song at Rock Run Sanctuary. The migration of Swainson's and Gray-cheeked Thrushes, which had been so pitifully low in September (see Maryland Birdlife, 25:121), showed no improvement in October.

Kinglets, Waxwings. A record-high Ruby-crowned Kinglet total for the Eastern Shore was set on Oct. 28, when 139 were banded at Damsite in the blustery northwest winds following passage of the cold front of the 27th. Cedar Waxwings were strangely absent from much of Maryland during the fall. No one reported a flock of more than 30 birds, and after early November most observers saw none. By Christmas time there were only four counts (out of 16) that located more than 4 waxwings, and more than one-third had none.

Vireos. There were two observations of vireos in November. The first was a Solitary Vireo at Towson on Nov. 2 (Hackman). The second, and more extraordinary, was a Philadelphia Vireo at Fred Evenden's home in Bethesda on the record-breaking date of Nov. 9.

Warblers. Warblers in October are so abundant in both variety and abundance that they hardly make news unless: 1) numbers are far above or below normal, or 2) stragglers of the earlier migrating species remain into the closing days of the month. Thus, despite many October cold fronts, and heavy migrations on Oct. 4-5 and Oct. 28, only a handful of late dates are worth special comment: a Nashville, a Black-throated Blue, 2 Black-throated Greens and a Pine Warbler on Oct. 28, a Yellow-breasted Chat on the 27th and an Ovenbird on the 29th, all banded at Damsite by the Mendinhalls; an Orange-crowned Warbler banded at Bellevue on Oct. 26 by Harry Armistead; an Ovenbird and an American Redstart at the bird bath of Peg Frankel at Bethesda on Oct. 27; and a Yellow-breasted Chat banded at Irish Grove Sanctuary on Oct. 24 (Mrs. Cole). By November, a belated warbler may become a candidate for the "latest ever" list. A Black-throated Green seen at Baltimore on Nov. 2 by Jim Emerson is the latest for that county and the second-latest recorded in Maryland. And a Bay-breasted Warbler carefully studied at White Marsh on Nov. 28 (Douglas Hackman) and a Nashville Warbler seen on Dec. 2 and banded on Dec. 16 at Federalsburg (V. Edwin Unger) set new State records.

Orioles, Tanagers. The Howards of Annapolis have temporarily lost their monopoly on wintering orioles. No fewer than 6 Baltimore Orioles were present at feeding stations in the Chestertown area at Christmas time, although only 3 of them were within the 15-mile diameter Christmas Count circle. Another accepted similar hospitality from the Galts in Bellevue, Dec. 12-28. For the second winter a female Baltimore Oriole

wintered at the home of the Robert Thompsons at Wiltondale, Baltimore. A male was noted at Anneslie (Baltimore) on Dec. 22 (Mrs. Archer). November reports of tanagers require careful documentation because of the possibility of confusing a female oriole or a Western Tanager with a Scarlet Tanager. An acceptable report of a Scarlet Tanager seen at her Baltimore home on Nov. 2 by Mrs. Martin Larrabee is 2 days short of the State departure record.

Dickcissels. It is now taken for granted that a few Dickcissels will occur in Maryland each fall and winter. A few always are found in September and/or October along the coast; but inland they are less regular and it is just a matter of when and where they will be discovered. Observers who recognize their distinctive low-pitched "br-r-r-r-rt," which is frequently uttered in flight, provide most of the fall migration reports; and feeding station operators or people who scan many large flocks of House Sparrows submit nearly all of the winter reports. A very early transient flew over my Laurel home on Aug. 29. Another transient was banded at Ocean City on Sept. 26. Feeding station birds appeared as follows: Oct. 25 in Baltimore (banded by Hervey Brackbill); Nov. 1 in Baltimore (Sanford Corey); Nov. 12-13 in Silver Spring (Tom Valega); Nov. 14-19 at Laurel (Mrs. John Baughman); Nov. 18 in Baltimore (Delores Chalk); and Nov. 24-Dec. 7 at Highland (Dorothy Rauth). The only Christmas Count bird was at West Ocean City on Dec. 20 (Armistead and Jared Sparks), although one was seen during the Count period within the Rock Run circle.

Evening Grosbeaks. The Evening Grosbeak invasion nearly measured up to that of last winter, although the birds arrived about two weeks later this year and the flocks were not quite so large. They were found on every Christmas Count and new highs were registered at Baltimore, Southern Dorchester County and Crisfield. The highest total, 477, was obtained in Lower Kent County.

Pine Siskin. The siskin migration was remarkably similar to that of last winter, both in arrival time and in numbers and distribution. Flocks were so large and conspicuous that they were recognized almost immediately on arrival and reports were received from all over the State within a few days of each other. The largest flocks reported were: 200 (99 banded!) at Damsite on Oct. 28 (Mendinhalls), 100 on Anne Arundel Community College campus on Dec. 8 (Dr. Lawrence Murphy), 55 at Towson on Oct. 26 (Hackman), and 50 Blackwater Refuge on Oct. 26 (Bruce Beehler). By Christmas time the flocks were becoming scarce in some areas and only two counts broke previous records: 258 in Southern Dorchester County and 219 at Crisfield.

House Finch. The plague of House Finches continues to increase, especially in the more densely populated residential areas. Although arrivals from the north did not invade Maryland until Oct. 15, reports by the end of that month were "too numerous to mention individually" (Baltimore Chapter Newsletter). By Nov. 15, when Robert Hurley saw his first Purple Finch of the season at his home in Baltimore, he described his House Finches as "innumerable." In Laurel, Art Alexander had banded 63 by the end of December. Christmas Count totals varied from zero at

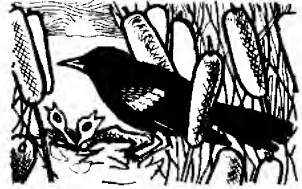
Crisfield, Salisbury, Southern Dorchester, Accokeek, Catoctin and Alle-gany County to 99 at Baltimore and 125 at St. Michaels.

Crossbills. We were treated to a spectacular immigration of Red Crossbills in November and December, especially on the Eastern Shore. Owing to the abundant cone crop, the birds remained almost exclusively in pine trees and were missed entirely by the window birder. The first sightings were in Worcester County, Nov. 1 (Sam Dyke) and at Irish Grove Sanctuary, Nov. 13. By the end of the month this was one of the commonest landbirds at Irish Grove. They were more local west of the Bay, where the only sightings were at Soldiers Delight in Baltimore County on Dec. 7 (Mrs. Carey Beehler and Bruce Beehler), Howard County on Nov. 28 (W. T. Van Velzen), Patuxent Wildlife Research Center from Dec. 12 on (Van Velzen and Robbins), Bethesda on Dec. 24 (Dr. Evenden), and Seneca on Dec. 28 (Christmas Count). White-winged Crossbills were as widely distributed, but in much smaller numbers: near Salisbury on Nov. 22 (Dyke), Patuxent on Dec. 18 (22 by Robbins), Sandy Point State Park (7 by Wierenga) and Hagerstown (2 by Dr. Ralph Stauffer) on Dec. 24, Tilghman Island on Dec. 21 (8 by John Valliant, Jeff Effinger and Dick Kleen), and Blackwater Refuge on Dec. 29 and Pocomoke Swamp on Dec. 30 (Robbins).

Other northern finches. Except for the Hoary Redpoll, which has only once been found this far south, all the northern finches on the Maryland list favored us with their presence during this period. The rarest, with but a single report, was a Pine Grosbeak seen at Irish Grove, Nov. 16, by V. E. Unger. The Purple Finch, although in very small numbers this season, was seen in 17 of Maryland's 23 counties. The Common Redpoll, which few Marylanders see more than once in a decade, was first detected in Baltimore on Nov. 22 (2 by Jeanne Covington); then there were 3 to 4 at Patuxent, Dec. 17-29 (Robbins and Van Velzen), followed by one in Allegany County on Dec. 27 (Christmas Count).

Sparrows, Snow Buntings. There were two unusual sparrow observations on the Christmas Counts. First was a possible Harris' Sparrow on the Rock Run count. The other was a Grasshopper Sparrow well studied at Seneca on the following day. Five Snow Buntings were seen at Blackwater Refuge on Nov. 6 by Refuge Manager Bill Julian. Later reports came from Sandy Point State Park (Nov. 23 on, Wierenga), Kent Narrows on Nov. 16 (David Bridge and Patuxent Chapter), and Assateague Island State Park (Mr. and Mrs. Roger Troutman and others).

Exotics. A few Flamingos of unknown origin appeared in November at refuges on the North Carolina and Virginia coasts and in Chesapeake Bay. One was on the Choptank shore at Cambridge, Nov. 15 (William Richardson) and at Fishing Creek, Hoopers Island, Nov. 16-18 (Mrs. Simmons), until shot by a school boy. A Ringed Turtle Dove was photographed in Baltimore, Dec. 7-23 (Stewart McLean and R. Taylor McLean). A Blue-gray Tanager, trapped at Seneca in late December, was identified by Carl Carlson.



NEST SUMMARY

MARYLAND NEST SUMMARY FOR 1969

Danny Bystrak

The first year of the new nest cards showed a discouraging continuation of the low number of reports in recent years, and a decrease in number of observers, most importantly a few of last year's biggest contributors. Commensurate with the low number of observers and cards is the fact that we hit a near low of 73 species reported, approaching the record low of 71 in 1966. It is hard to believe that in recent years we have had up to 109 observers, 4,426 nests, and 119 species (2 years!) reported. I do not think it would be too difficult to return to those "good old days." The M.O.S. membership has increased several fold since then and we now have four sanctuaries, none of which has yet produced very many nest cards! A new nesting season is now upon us and I hope that along with all the other rebirths associated with spring we shall see a rebirth in nest reporting enthusiasm. If you lack cards, feel free to write me or Ted Van Velzen at the Migratory Bird Populations Station, Laurel, 20810.

Jan Reese and Don Meritt again covered the central Eastern Shore very well on their Osprey survey. This year Jan found 5 Mute Swan nests in Talbot County, indicating that this European bird is well established and on the increase. It looks as though Maryland has another introduced species permanently on its list.

While eating lunch one day on Kent Island, Jay Nixon noticed a Red-bellied Woodpecker feeding young in a dead tree. What was unusual was that this occurred on August 6! He kept watch on them until August 15 and on the 16th they were gone. This beats the old young-in-nest date by a good two months!

Pileated Woodpeckers have been increasing their breeding range in Maryland a good bit since the late 1950's. This year Mrs. Dorothy Rauth watched a pair in Howard County along Rocky Gorge Reservoir from April to June while they raised at least two young. This is far from any breeding area indicated in *Birds of Maryland*.

Two area bluebird projects continue to increase. This year Eastern Bluebird was the second most common species reported, with 79 cards submitted. Some pairs nested three times. Dr. Lawrence Zeleny's boxes on

the Agriculture Research Center in Beltsville fledged 132 young birds despite some losses from predation.

Donald Messersmith's Red-winged Blackbird study on Kent Island showed a considerable decrease in number of nests this year—so much so, in fact, that total Red-wing cards fell from first place for the first time since he started the study.

Special thanks are extended to Vernon Kleen who, although here for only a few weeks, took the time to break a few late egg and young dates and find a good number of nests in the Ocean City area.

I would also like to thank D. H. Hamilton for his coverage of Calvert County—a county too often ignored, and H. E. Douglas for his out-of-State cards and Maryland cards from previous years including a Brown Creeper that predates Ted Van Velzen's 1967 nest by one month. Unfortunately, Mr. Douglas' Brown Creeper nest was inaccessible as was mine in 1964.

I would like to apologize to Mrs. Roberta Fletcher and some other Caroline County members whose nests are not included in this summary. Although they reported submitting about 90 nest cards, these cards cannot presently be located. I sincerely hope this will not discourage their efforts this year.

As I expected, a few difficulties arose with the new nest cards, which were designed to facilitate putting the records onto computer punch cards. Localities are coded as closely as possible by using the latitude and longitude; but these coordinates should be expressed to degrees and minutes (or approximately to the nearest mile) rather than by the ten-minute blocks used by the bird banding office. Many observers do not have access to detailed maps that give latitude and longitude. Some road maps (especially Esso) do give latitude and longitude closely enough so that close estimates can be made for anywhere in the State. If anyone is uncertain of his coordinates he should mark the location as closely as possible on any road map and submit the map along with his cards; I shall be glad to determine the coordinates for him. Just writing "Salisbury" or "Baltimore" on a card is of little help in determining coordinates. If the nest is in a yard it is far preferable to give the street address as well as marking the approximate position on a map. If a nest is found anywhere near a road it helps to include the name of the road and the road mileage to the nearest intersection with a numbered highway or other main road, or to the nearest named stream the road crosses. For nests under bridges, the best procedure is to write, for example, "Rt 468 X Muddy Creek" or "B & O RR X Dorsey Road" or "Rt 175 X Rt 468."

A similar problem arose with elevation. This is a little harder for the observer to determine, but I can make the estimates fairly accurately if the site is marked on a map.

Another problem was with cowbirds. If a nest has been parasitized

by a cowbird, please don't just check the cowbird block. Check this block and fill out a separate card for the cowbird. Writing "3" in the Eggs column and "1 cowbird egg" in Comments does not tell the whole story. Write "3" in the Eggs column and "2 host, 1 cowbird" in Comments.

This year 14 counties reported nests. Table 1 shows the distribution of the records received by counties (excluding the 90 Caroline County nests mentioned on the previous page).

Table 1. 1969 Nest Record Summary by Counties

<u>County</u>	<u>Species</u>	<u>Observers</u>	<u>Nests</u>	<u>Cards</u>
Allegany	1	1	1	1
Anne Arundel	16	6	32	32
Baltimore	3	1	4	4
Calvert	7	1	9	10
Caroline	6	3	9	9
Dorchester	7	2	17	9
Frederick	1	1	1	1
Garrett	4	4	5	6
Howard	18	14	77	77
Montgomery	8	4	9	10
Prince Georges	28	12	312	312
Queen Annes	12	6	236	94
Talbot	34	7	933	100
Worcester	11	3	123	16
Total	73	43	1,768	681

Thanks are extended to the 43 observers who participated in 1969. The numbers in parentheses are the number of cards submitted followed by the number of species represented: P. C. Ambler (2-1), W. L. Anderson (2-2), H. T. Armistead (15-13), R. G. Austin (2-2), J. M. Bean (1-1), L. E. Buchanan (3-1), D. Bystrak (18-11), P. G. Bystrak (17-7), S. M. Bystrak (2-2), R. L. Caswell (4-4), E. B. Cole (2-1), S. M. Coon (2-1), H. R. Davis (6-3), H. E. Douglas (2-2), F. V. Ehling (1-1), E. Q. Engle (3-2), J. E. Ganter (6-5), E. S. Hacker (2-2), D. H. Hamilton (9-7), V. M. Kleen (11-7), G. Krantz (4-1), J. R. Longcore (20-10), E. M. Martin (7-6), F. McGilvrey (205-9), D. W. Meritt (6-4), D. H. Messersmith (57-1), W. J. Nixon (5-3), H. B. Norwood (1-1), B. W. Poe (1-1), D. J. Preston (202), D. J. Rauth (25-15), J. G. Reese (92-25), E. C. Robbins (50-4), G. C. Robbins (7-3), J. W. Seaman (3-3), M. B. Sowers (2-1), I. R. Todd (3-3), W. T. Van Velzen (2-2), F. E. Walker (1-1), J. Wanuga (10-6), N. E. Watkins (2-1), M. C. Welsh (2-1), L. Zeleny (54-3).

Annotated List

Brief notes on all 73 species reported have been included in the following list. The number following the species name is the number of Maryland nest cards submitted for 1969.

- GREAT BLUE HERON, 10. A Tilghman Island colony checked on 10 days, Apr. to Aug., had nestlings still in the nest on Aug. 2 (JR).
- GREEN HERON, 11. Late eggs on July 12 near Neavitt (JR) and on July 26 on Assateague Island (VK).
- CATTLE EGRET, 2. Two visits to a colony in Sinepuxent Bay yielded the record late egg date of Aug. 15 (57 nests with eggs) (VK).
- COMMON EGRET, 1. Decreased on Tilghman Is. Six pairs with Gt. Blues (JR).
- SNOWY EGRET, 1. In Queen Annes County colony with Green Herons (JR).
- MUTE SWAN, 5. Nest with 7 eggs on Apr. 4; 4 nests fledged young (JR).
- CANADA GOOSE, 14. Most nests at Patuxent were successful (FM).
- MALLARD, 51. 30 nests at Patuxent; most successful (FM). Most Talbot County duck blind nests were unsuccessful (JR).
- BLACK DUCK, 74. Most of 67 nests at Patuxent Res. Center successful (FM).
- WOOD DUCK, 103. All in boxes at Patuxent; one nest had 29 eggs (FM).
- OSPREY, 5. 146 active nests observed in Talbot County; Mar. 31 earliest egg date. 32 active nests in Queen Annes, 9 in Dorchester County (JR).
- BOBWHITE, 2. Nest with 21 eggs in Talbot Co. on June 1 (DJP). Several downy young scattered, female feigned injury, Sept. 6, A.A. County (DB).
- KILLDEER, 1. 4 eggs in Montgomery County nest (EMM).
- AMERICAN WOODCOCK, 1. 4 downy young with parent in Prince Georges Co. (EM).
- HERRING GULL, 1. Nest in Worcester County with 2 eggs on July 26 (VK).
- LAUGHING GULL, 1. 100 nests in Robins Marsh; most young banded (VK).
- COMMON TERN, 3. Over 150 nests in Neavitt colony; 3 visits (JR).
- LEAST TERN, 3. 32 active nests in Oxford colony, June 15; 3 visits (LEB).
- ROCK DOVE, 1. One egg on Jan. 2 and 2 on Jan. 5 in a Presqu'ile nest (DM). Maryland's earliest nest (or is it late?).
- MOURNING DOVE, 7. Nests observed in five counties.
- BARN OWL, 19. All on duck blinds in Q.A., Talbot, Dorchester, Worc. Cos.
- RUBY-THROATED HUMMINGBIRD, 2. A Talbot County nest produced one young (HA).
- BELTED KINGFISHER, 1. Freshly killed parent in hole with fish at Isle of Wight in Worcester County (DB).
- PILEATED WOODPECKER, 2. A Howard County nest produced at least 2 yg. (DR).
- RED-BELLIED WOODPECKER, 5. Young in nest through Aug. 15, Q.A. Co. (WJN).
- RED-HEADED WOODPECKER, 1. One young with adult on Aug. 24, Ft. Meade (WA).
- EASTERN KINGBIRD, 4. All nests were inaccessible; contents not seen.
- GREAT CRESTED FLYCATCHER, 1. Nest in duck box at Patuxent Res. Ctr. (FM).
- EASTERN PHOEBE, 10. One in Howard County nested three times (DJR).
- ACADIAN FLYCATCHER, 3. Nests in Howard Co. with 2 and 3 young. Nest in Calvert County with 3 eggs was made of locust blossoms (DHH).
- HORNED LARK, 3. Nest in a cantaloupe patch was successful; 5 young (EQE).
- TREE SWALLOW, 2. Second inland western shore record, this one with 4 eggs, all of which were successful with young leaving the nest on July 10 (FM).
- BANK SWALLOW, 1. Colony in Talbot County; contents not checked.
- BARN SWALLOW, 8. Young still in a Montgomery County nest, Aug. 9 (VK).
- A Worcester County nest was on an information booth (DB).
- PURPLE MARTIN, 33. 32 individual nests were in duck boxes at Patuxent (FM).
- FISH CROW, 1. Nest in Talbot County was successful (JR).
- BLACK-CAPPED CHICKADEE, 1. Young in Cranesville Swamp nest, June 24 (JEG).
- CAROLINA CHICKADEE, 6. Two nests in bluebird boxes with 4 eggs each (IZ).
- TUFTED TITMOUSE, 1. Nest with 6 young in bluebird box at Beltsville (IZ).
- BROWN-HEADED NUTHATCH, 1. Parents feeding young in nest near Cambridge on June 2 (JR).

- BROWN CREEPER, 1. Another Patuxent nest, found May 3; parents first seen carrying food on May 12 (EM); young out of nest but nearby on May 22.
- HOUSE WREN, 13. Eggs from May 6 to Aug. 7. Largest clutch, 6 eggs (ECR).
- CAROLINA WREN, 8. Young left nest on Sept. 13 in Caroline County (JWS) and on Sept. 14 in Talbot County (HTA).
- MOCKINGBIRD, 11. Nests in 6 counties, all with clutches of 3 eggs.
- CATBIRD, 3. The only reports were from Howard County.
- BROWN THRASHER, 3. These nests were in Prince Georges and Anne Arundel.
- ROBIN, 17. Most nests had 3 eggs, but there were two with 4 eggs.
- WOOD THRUSH, 4. Young remained in one nest until Aug. 9 (DJR).
- EASTERN BLUEBIRD, 79. Many successful nests; some birds nested three times. Eggs were in one Prince Georges Co. nest until Aug. 13 (LZ).
- CEDAR WAXWING, 1. A Howard County nest.
- STARLING, 10. One pair attempted four nestings at Patuxent (FM).
- WARBLING VIREO, 1. 3 young visible in nest along C&O Canal on June 7 (EM).
- PARULA WARBLER, 1. Nest 3 feet up, parasitized by a cowbird (DHH).
- CERULEAN WARBLER, 2. Adults seen feeding young in one nest and another adult feeding a cowbird along the C&O Canal (EM).
- BLACKBURNIAN WARBLER, 1. Adult observed building nest at Catoctin Mountain, first nest ever observed in Frederick County (HED).
- OVENBIRD, 1. Nest with 4 young on July 9 was empty on July 15 (PGB).
- YELLOWTHROAT, 2. One egg on July 19 in Talbot County (HTA).
- YELLOW-BREASTED CHAT, 1. 4 eggs on June 1 had become 4 young, June 15, at the Patuxent Research Center (JRL).
- CANADA WARBLER, 1. Adult feeding cowbird on June 19 in Cranesville bog in Garrett County (RGA).
- AMERICAN REDSTART, 1. Building on May 3 at Patuxent Research Center (JRL).
- HOUSE SPARROW, 46. Eggs until Aug. 17 in Talbot County (JR).
- RED-WINGED BLACKBIRD, 72. Nests found in three counties.
- ORCHARD ORIOLE, 4. A Talbot Co. nest had 4 oriole eggs and 4 cowbird eggs (JR).
- BALTIMORE ORIOLE, 4. Four nests from 4 counties by 4 observers.
- BOAT-TAILED GRACKLE, 1. Young were still in a nest in Worcester County on the late date of July 26 (VK).
- COMMON GRACKLE, 3. There were reports of 9 active nests in Talbot and Queen Annes Counties. One pair used a duck nesting structure at the Patuxent Wildlife Research Center, Laurel (FM).
- BROWN-HEADED COWBIRD, 4. Mighty few records, but all especially interesting ones. The host species were Parula Warbler, Cerulean Warbler, Canada Warbler, and Orchard Oriole.
- CARDINAL, 7. Clutches of 2 and 3; reports from four Maryland counties.
- BLUE GROSBEAK, 1. A brood of 3 young seen with adults on Aug. 8 in Talbot County (HTA).
- INDIGO BUNTING, 2. One unsuccessful nest in Anne Arundel County. One nest in Talbot County was seen in the building stage; not rechecked.
- RUFIOUS-SIDED TOWHEE, 1. 3 eggs on Aug. 4 in Queen Annes County (SMB).
- CHIPPING SPARROW, 5. Nests from 2 to 10 feet up in four counties.
- FIELD SPARROW, 5. In Prince Georges, Howard and Garrett Counties.
- SONG SPARROW, 6. Clutches of 4 eggs on Apr. 23 in Anne Arundel County (HRD) and 3 eggs in Prince Georges County on Apr. 20 (JRL).

COMING EVENTS

- May 1 HARFORD Dinner meeting
 2 STATEWIDE BIRD COUNT
 3 TALBOT Breakfast Hike - 7:00 A. M. in front of the Library
 5 BALTIMORE Lake Roland, 8 A. M. Leader ofr May: Mrs. Robert E. Kaestner
 7 FREDERICK Monthly meeting. Speaker: Jerry Coates, "Hummingbirds."
 8-10 STATEWIDE MOS CONVENTION, Hastings-Miramar, Ocean City, Md.
 9 BALTIMORE Finally Farm 8 A.M.
 9 FREDERICK Field trip to Harpers Ferry, Virginus Island and C & O Towpath. Leader: Bill Shirey
 12 BALTIMORE Lake Roland 8 A.M.
 17 ALLEGANY 2 P. M. Flower walk at Carey Run Sanctuary. Leaders: Mrs. Gordon Taylor and Mrs. R. Rosher
 17 BALTIMORE Patapsco State Park (Glen Artney area) 7 A.M. Leader: Mr. Irving Hampe
 17 TALBOT Breakfast Hike
 19 BALTIMORE Lake Roland 8 A.M.
 20 KENT Audubon Screen Tour, Mr. Robert W. Davison, "Journey in Time", 7:30 P.M., Fine Arts Bldg.
 21 MONTGOMERY "Pesticides and Their Effect on Birds". Speaker: William Stickel of Patuxent Research Center.
 22-24 BALTIMORE Cape May, New Jersey, for migrating shore birds. Reservations with Miss Grace Naumann (377-9032) by May 14.
 23 ANNE ARUNDEL Field trip to Obligation Farm. Meet 7:40 a.m. at Riva Rd. entrance to Parole parking lot.
 23 KENT Eastern Neck Island for migrating warblers
 24 FREDERICK Field trip and picnic at White's Ferry on the Potomac. Picnic supper 5 P. M.
 26 PATUXENT Monthly meeting. Speaker: Don Messersmith, "Birding in Colombia"
 June 3 KENT Monthly meeting - Covered Dish supper at "Damsite"
 6 BALTIMORE Picnic Supper - YMCA Camp Black Rock in Butler, Md. Field trip 5 P.M. Supper 6 P. M.
 7 CAROLINE Annual Picnic. Meet at Irish Grove Wildlife Sanctuary, Somerset County, 2:30 P.M.
 28 ALLEGANY Anniversary Week-end at Carey Run. 3:00 P. M. Bird walk. Covered dish supper 5:00 P.M.

JUNIOR PROGRAMS

- May 2 BALTIMORE Saturday at Cylburn, 10 A. M. Subject: Meteorology
 16 BALTIMORE " " " 10 A. M. " Nesting
 June 19-21 BALTIMORE Junior Nature Camp at Camp Mohawk
 Aug. 15-22 ALLEGANY Junior Nature and Conservation Camp at 4-H Recreation Area.

CALL FOR ASSISTANCE, BREEDING BIRD SURVEY 1970

In June, MOS members will participate in the 6th Annual Breeding Bird Survey, designed to detect changes in bird populations from year to year. Randomly selected routes throughout the State are covered by volunteers once each year. The 25-mile routes, with 3-minute stops spaced every half mile, are driven by car. Observers need to know the breeding birds in their area by sight and song. Anyone interested in assisting by running a route in any of the following counties is invited to contact Ted Van Velzen, Migratory Bird Populations Station, Laurel. Counties with routes still available are: Allegany, Baltimore, Calvert, Charles, Dorchester, Frederick, Garrett, Kent, Montgomery, Prince Georges, St. Marys, Washington, and Worcester.

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